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PHILIP MILLS JONES, M. D., Secretary and Editor

PUBLICATION COMMITTEE.

Langley Porter, M.D. John Spencer, M.D.
Martin Fischer, M.D. Harry M. Sherman, M.D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - -
State Journal, - - - -
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Telephone, West 5975.

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EDITORIAL NOTES.

DOCTOR DAVIS.

Something over a year ago an effort was originated to collect a fund for the purpose of erecting a monument to the memory of Dr. N. S. Davis, the founder of the American Medical Association. At the last meeting of the Association, at Boston, last year, the matter was brought before the Association and a committee appointed to secure funds. In turn, this was brought before the House of Delegates of the State Society, at the Del Monte meeting, and it was recommended that each member of the American Medical Association in this State contribute the small sum of $1.00 to this fund. The Secretary was instructed to call attention to the request in the JOURNAL, and he now does so with great pleasure. If every member of the Association will send in one dollar, California will be able to make quite a respectable contribution to the general fund. Please do not delay, but *send your dollar to the Secretary, 2210 Jackson street, San Francisco.* If you are not a member of the American Medical Association, but wish to contribute, you may do so; but if you are not a member *you ought to be,* and the best thing for you to do is to write to the Secretary for an application blank.

NUMEROUS ATTACKS.

The present crop of attacks upon the CALIFORNIA STATE JOURNAL OF MEDICINE and its editor seems to be rather larger than usual. We wonder why? Also, we wonder why some of the medical (?) journals which publish these attacks go to the trouble of sending copies to all physicians in California. From the number of remarks made and comments sent to this office, apparently the physicians in this state have been liberally supplied with "sample copies." For instance, take the journal edited by the gentleman who believes that "there are certain eternal, fundamntal principles of right and wrong which should govern everybody"—but that these principles do not apply to advertising. It needs a little thought to see just why this individual, for instance, should go out of his way and to some expense to attack your journal. The fraudulent nature of many, many nostrums, and the participation in the fraud by advertising them in medical (?) journals, would soon be forgotten if it were not constantly aired; that is why your Publication Committee believes in keeping up the airing process. But why should the gentleman who believes that principles of right and wrong do not apply to advertising object? If you take a good look at the advertising pages of the medical (?) journal in which he states his views on right and wrong, you will see. For instance, he derives some little revenue for advertising "manola." What is "manola"? The good Lord only knows! But if we may believe what it says of itself, it is a preparation made by dissolving the philosopher's stone in the spring of life. Listen:

> "New strength can be given to the failing heart, tissue changes arrested, and senile decay indefinitely postponed by the prescription of manola."

Is not that too lovely for words! Do you believe it? Why need any one fear death—when there is yet life in a bottle of manola? Why have a pharmacopeia, or a materia medica at all—when there remains to us—manola? Why use any other remedies—when we are assured that senile decay may be indefinitely postponed—by manola? When a man can so far forget that he is a man and a physician, and that "there are certain eternal, fundamental principles of right and wrong" as to accept pay for advertising such slush as this, what is one to think? The voice of the reading pages give one the "unctuous words," but the hands that make up the advertising pages are indeed "unclean hands."

THIS MANOLA.

Some people are cheap; others must be awfully cheap. It would seem that some physicians may be bribed by a bottle of—manola, free. At any rate, the "company," which, of course, is located at St. Louis, sends out a sheet of three cards, one of which is a notice to the "company" that a half-dozen bottles of manola have been ordered through a certain druggist and requesting that a free bottle be sent for the physician with the order. The second is a card to the druggist, asking him to order the half-dozen manola. The third is a card, prepared with true thoughtfulness, for the druggist to send the "company," ordering the half-dozen manola. One is only surprised that the "company" is not sufficiently thoughtful to provide stamps. The stuff is sold to the druggist for $8.00 per dozen, or sixty-six and two-third cents per bottle; and it is for this the physician is asked to sell himself! It seems past belief that any man permitted to practice mdicine would lend himself to such a cheap barter and sale. Yet if there are not some who will do so, how can it pay the "company" to get out these cards and send them all over the country? It is enough to make the angels weep to think of ignorance that will believe such lies as are advertised in medical (?) journals, and be a party to such a cheap imposition as promulgated by this "company." He must certainly believe that "principles of right and wrong" have nothing to do with advertising who will sell out to such a nostrum as this and advertise its lies!

EXPOSING THE FAKES.

The Pure Food and Drugs Act is exposing a lot of fakes in various directions. Fiction is interesting as fiction, but when it deals with the art of describing what is supposed to be contained in some food or drug it is neither interesting nor amusing; it is merely dastardly, criminal lieing. A writer in the *Midland Druggist,* for March, sets forth some facts relating to mineral waters which have come out through the operations of the new law, and which may be assumed to be only a hint of similar conditions in other food and drug industries. Buffalo Lithia water, freely advertised to physicians and the laity, said to contain 2.25 grains of lithium to the gallon, when analyzed by the Government reveals the presence of 0.018 grains lithium bicarbonate per gallon. Londonderry Lithia water, advertised to contain 7.29 grains per gallon, is found to contain an amount too small to estimate—merely a spectroscopic trace! "Hunyadi-Janos, advertised as a natural laxative water, is the manipulated mixture of more than one hundred springs." Doubtless this country will follow the lead of Germany in the case of Apollonaris; we learn that Germany has compelled "the Apollonaris Company to desist advertising and labeling their water as 'natural and absolutely pure' (as in truth it is neither natural nor are their storage cisterns sanitary)." Many widely advertised "spring waters" are the rankest kind of sophisticated fakes and will go out of business entirely. The abolishment of misbranding, under the new law, will be one of the most valuable things achieved and the consumer will have some chance of getting what he really wants.

FRAUDS EXPOSED.

You all recall the remarkable series of exposures of the Great American Fraud, published in *Collier's Weekly* in 1905 and 1906. The task of preparing this matter was very great, and the results thus far accomplished are by no means small. But the work should not stop now. The purveyors of dope to the public live and hope that "it will all blow over"; they know that memory is short and trust this will all be forgotten before long. In order to help prevent this forgetfulness, the American Medical Association has assembled the various articles from *Collier's* in the shape of a paper-bound booklet of 146 pages, which it offers for sale at cost. Every county society in the United States should get a supply of these booklets for its members to distribute to their friends among the laity. It is a liberal education in the inside workings of one of the most dastardly criminal enterprises ever perpetrated upon the public. Every citizen should be posted upon the "red clause" and the manner in which it has—or had—absolutely muzzled the glorious "free" press of this country. Similar conditions have practically muzzled the medical press, and physicians themselves should study this matter most carefully. It is not a little thing; it is no trivial matter; and Mr. Bok has well called attention to the "unctuous words and unclean hands" of many members of our profession. Single copies will be supplied for $2.00, express or postage extra. Let every one of our component societies send to the American Medical Association, 103 Dearborn Avenue, Chicago, for at least fifty copies of this pamphlet, and then let every member see that a copy reaches the hands of every minister, lawyer and prominent citizen in his county. There

is no county society that can not afford to help to this extent at least. It is just one of our duties; let us do it.

THOUGHT STIMULUS.

Many things emanate from Chicago. One of them happens to be a medical journal published by a manufacturing house and mainly devoted to urging the use of a particular form of medication. In the May number of this particular journal (*Clinical Medicine,* one time *Abbott's Alkoloidal Clinic*) the editor devotes considerable space to the CALIFORNIA STATE JOURNAL OF MEDICINE, and, incidentally, referring to our pages, says that "there is no dearth of thought stimulus in them." We are certainly profoundly grateful—and somewhat amused. "Thought stimulus" is what both manufacturers and medical (?) journals desire to avoid, for if the physician readers got to thinking about things—as they are doing now—the result would not be exactly what the manufacturers want, and the medical (?) journals would be deprived of some exceedingly dirty revenue. Indeed, it is the question of revenue derived from advertising which seems to be most prominently in the mind of the editor in question, for he constantly refers to it and the attitude of the STATE JOURNAL on that question. One of his utterances is truly the most startling thing that has thus far appeared in print:

> "There are certain eternal, fundamental principles of right and wrong, however, which should govern everybody; but advertising is not based upon such fundamental principles."

Now, just stop and think about that; let it roll about in your head and come in contact with your gray matter. Advertising, according to this editorial utterance, has nothing to do with right and wrong! Our editorial contemporary admits with a wonderful charity and honesty that "there are certain fundamental principles of right and wrong" which should guide us in everything—except advertising. Why not be guided by "fundamental principles of right and wrong," even in advertising? Can it be that the editorial conscience is active in every direction—except advertising? Can there be a mundane and lowly reason for this peculiar editorial belief that right and wrong, as fundamental principles, do not apply to advertising? Possibly this is so, for when we come to scan the advertising pages of our wonderful contemporary we find a number of exceedingly strange things presented to the attention of the reader—and paid for by the advertiser, we presume. We find that this medical (?) journal aids the daily press in assisting the manufacturers to sell sundry articles; and one of these is mentioned in the song that has been going the rounds: "What's I goin' to do? What's I goin' to say? I done tole yu' 'bout dat whirlin' spray!" As further argument to guide the editorial conscience in believing that right and wrong have nothing to do with advertising, we find (in addition to that of the "whirling spray") the—presumably paid for—advertisements of numerous fakes, frauds and nostrums. Now, if these concerns were paying you, as an editor and proprietor of a medical (?) publication many hundreds of dollars a year to help them fake the medical profession, what would *you* think about the advertising question? Would *you* believe that "there are certain eternal, fundamental principles of right and wrong, however, which should govern everybody; *but advertising is not based upon such fundamental principles"?*

ANTIKAMNIA THE FAKE.

It is refreshing to find a trade journal with sufficient common honesty to believe that "the fundamental principles which govern right and wrong" should not be forgotten, and to tell the truth about things as it sees them. The *Canadian Pharmaceutical Journal,* in a recent issue, referred to the unmasking of "antikamnia," "phenalgine," "ammonol," etc., by the Pure Food and Drugs Act. It will be recalled that "phenalgine" was one of the acetanilide preparation shown up by the Council on Pharmacy and Chemistry, and that the manufacturers scared off most of the medical journals in the country from publishing the report, by threatening a libel suit. (By the way, this threatened libel suit business is getting to be very tiresome; at first it was amusing, but now it is merely wearisome.) Acetanilide being one of the component parts of the preparations mentioned, and it being one of the things which the law says the label shall tell about, we find that the "antikamnia" label now states that the preparation contains 350 grains of phenacetin to the ounce. "Ammonol," another one of those wonderful "new and improved chemicals," is found to contain 240 grains of phenacetin, while "phenalgine" is branded as containing 50 per cent acetanilide. These facts are respectfully referred to those distinguished gentlemen who, in spite of all that has been said, continue or continued until a short time ago, to use some of these outrageous fakes. Truly,

there do seem to be a considerable number of people in the world who like to be lied to; it is astonishing, but apparently true.

REPORT OF THE BOARD OF MEDICAL EXAMINERS.*

By DUDLEY TAIT, San Francisco.

The policy pursued by the Board of Examiners during the past two years has not deviated from that outlined in Riverside. The strictest adherence to the law has characterized every decision, every move, every act. "Better no law at all than one which is not enforced," has been our motto. You may scan our records, peruse our archives, and you will find none of the nambypamby methods so prevalent in many official bodies. Two subjects in particular have occupied the attention of the Board and called for special study: First, the preliminary educational requirements of matriculants to the medical schools of this State; second, the framing of a new medical law.

A year ago the Association of American Medical Colleges, at the urgent request of the Credential Committee of the California Board, placed the control of the matriculation requirements exclusively in the hands of the State Boards, thus killing a prevailing mercenary traffic in entrance certificates, so profitably and so complaisantly arranged by deputy State superintendents and two medical schools. To-day we wish to report to you the results of the enforcement of the new regulation in the matter of matriculation requirements. The 1905-6 session of one of the colleges just referred to opened with forty-two Freshman students, the majority of whom presented certificates from a Deputy State Superintendent of Public Instruction. The following year, when the Board appointed an examiner to pass upon the credentials of matriculants, the requirements being the same as the year previous, this same school has seven students in the Freshman class, and four of these are not legally entitled to remain there, inasmuch as they have not met the proper entrance requirements. Therefore, we note a reduction of 1400% in the matriculation record of this college. In the second school the 1905-6 session opened with ten Freshmen; the following year we fail to find a single Freshman. The enforcement of the Association standard has closed the doors of this college.

There is no more radical method of exterminating the purely mercenary medical college than by exacting of all matriculants a high standard of preliminary education. The California Board extends its investigation of preliminary requirements to every applicant for a certificate to practice medicine. We have already notified several large Eastern colleges of this fact.

A few words now in regard to the new medical law. Those who framed that excellent law which regulated the practice of medicine in this State from 1876 to 1901 knew well the great value of their creation, but unfortunately those upon whom fell the duty of enforcing this law neglected, at an early date, to study the law, and then apparently ignored or failed to enforce its most potent sections. Consequently in 1901 a new law was found necessary, and a fabulous price paid for its enactment. The price was the Osteopathic Act, a cheap, almost open door to the practice of medicine. How has this medical law operated during the past six years? We note an annual reduction of 25% of the regular licentiates, who now average 180 yearly, a reduction of 400% of the homeopathic licentiates, who average ten yearly, and finally a reduction of 1700 of the Eclectic licentiates, who now average about two yearly. The trend of thought among educated homeopaths is toward rational or scientific methods. Here in California they are advocating high educational standards, and we find them invariably among the strongest supporters of our medical law. Eclecticism is ready for the necropsy table. But let us now contemplate the reverse side of the medal and estimate what we have foisted upon the unsuspecting people of this State. About 800 licenses have been granted by the California Osteopathic Board of Examiners since 1901. At the recent February meeting of said Board a block of 170 licenses was issued—i. e., almost as many as the Medical Board issues during an entire year. And let us not forget that all these osteopathic licenses, with one exception, were granted without examination. Among the successful applicants before the Osteopathic Board we find a considerable and increasing proportion of applicants who failed ignominiously before the Medical Board. The sole licentiate by examination at the hands of the Osteopathic Board presented a worthless German certificate purporting to be a medical diploma from the University of Heidelberg. Perhaps the osteopaths' ignorance of the Teutonic tongue may seem pardonable, when shortly afterwards we find the same spurious certificate admitting its holder to advanced standing in a regular medical school of medicine in San Francisco.

Pardon, I pray you, this digression, and let us return to our muttons, the osteopaths. During the recent meeting of the Legislature the osteopathic delegation stated, without compulsion, that their licentiates practiced medicine, surgery and the various specialties, resorting to drugs and to the knife whenever necessary. "Their ambition," said they, "was to be known as practitioners of medicine, in the broad sense of the term." It is therefore obvious that the present medical law has made the requirements much more rigid for our own followers, while it has created a wide door through which the illiterate entered the practice of medicine. The evil was flagrant. Our medical law was suicidal, although constitutionally sound. A new law became imperative. Hence the law which takes effect May 1st, a law in the framing of which liberality has been the dominant note. The new law may not be ideal, but the perusal of the decisions of the Supreme Courts of other States justifies us in asserting that it will successfully run the gamut of judiciary bodies of California. To those who view with a feeling of suspicion, any association with the osteopathic fold, I say have patience; let us await the result of the experiment, which according to recent experience is one of assimilation. Lest history repeat itself, we must not forget the absurdities and follies of our ancient quarrel over pathies.

Whence will the new law conduct us? No law is self-operative. Isolated, sporadic enthusiasm must succumb to general apathy. I sincerely believe it is within our power to advance the cause of medical education, to ameliorate the status and lighten the burden of the practitioner of medicine in this State; but a happy sloution of the serious problems confronting us will require active intelligent co-operation. The influence for good, the power of this society, is just proportionate to the degree of initiative and willingness of its average member.

A final word in reference to the prosecution of illegal practitioners, which, under the new law, may become one of the Board's functions. In many States the enforcement of the criminal statute is delegated by the Legislature to the State Society. The California law makes us your agents in this matter; hence the urgent reason for the co-operation of the State and County Societies with the Board of Ex-

*Read at the Thirty-seventh Annual Meeting of the Medical Society of the State of California, held at Del Monte, April 16th, 17th and 18th, 1907.

aminers, in view of inaugurating and maintaining a vigorous campaign against violators of the law. The experience of a member of the Board shows the almost insurmountable obstacles encountered and the consequent need of the influence of the profession in prosecuting illegal practitioners, especially when, in the case of the licensed M. D., the most culpable of all offenders, the friends of the defendant, the faculty of his alma mater, flock to the judge's chambers or to the witness-stand to give the defendant a good character. The illegal practitioner expects to find, and does find, protection and immunity in the medical profession itself, which so often gazes silent, indifferent and apathetic upon some enthusiasts who, single--handed, are doing the dirty work in the lower courts of justice.

For the sake of principle the conviction of one educated violator of the law would do more good than the imprisonment of ten ignorant fakirs. Fellow members, I again urge that the directors of this Society devise some plan of co-operation between the County Societies and the Board of Examiners.

I thank you for your attention and your support, to which we must attribute whatever good we may have accomplished. The endorsement of our work bv official and educational circles of other States is but the echo of your generous support.

SPECIFIC THERAPY IN TUBERCULOSIS.

By GEORGE H EVANS, M. D., San Francisco.

Nearly 17 years have elapsed since Koch made the remarkable announcement of the discovery of a remedy prepared from a concentrated culture of the tubercle bacillus for the treatment of tuberculosis. The events of the year or two following this announcement are vividly impressed in the memory of all of us who were interested in this great subject at that time, and Koch's laboratory became the Mecca of hundreds of students in tuberculosis from every land, who hurried thither, filled with the hope that the great savant, whose name was so intimately linked with the scientific progress of discovery and achievement in this malady, had really solved the problem of specific medication. We know, likewise, only too keenly, the bitter disappointment of those who, on returning to their homes, applied tuberculin, a remedy prematurely announced by its discoverer, insufficiently understood, unintelligently applied in improperly selected cases, with results which, under such conditions of administration, were inevitable. The hope of the discoverer and his followers was not realized, and tuberculin, as far as the general profession was concerned, sank for the time being into disrepute and oblivion. In the years which have intervened, however, the fundamental facts on which tuberculin therapy depends have been undergoing elaboration, and, with our ever increasing knowledge of the laws of immunity, our conception of the role which tuberculin plays has undergone great modification, and, as far back as 1897, when Koch produced his new tuberculin T R, which consists of the entire substance of the tubercle bacilli, the old conception that tuberculin had direct curative action had been abandoned. It is with the abandonment of this old conception, and the development of tuberculin as a vaccine, and by a vaccine I mean a "substance which, when introduced into the body, causes there an elaboration of protective substances," that the present day conception of tuberculin therapy has arisen.

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The way has been long and intricate that has been traversed by the investigators of the laws of immunity, and the clash of the arms of the opposing schools has resounded time and again throughout the scientific world. The theories of Ehrlich and Metchnikoff are, however, in accord, in essential results; and if one accepts Metchnikoff's definition of immunity against infective diseases as "the group of phenomena in virtue of which an organism is able to resist the attack of micro-organisms that produce these diseases," the question whether the leucocyte must be regarded as the source of the bactericidal substance of the body fluids need not particularly concern us in this discussion; for both schools have a common point in the admission of a cellular immunizing property.

The fact of the artificial induction of immunity is accepted to-day as a fundamental principle in medicine as the result of the labors of Jenner, Pasteur, Behring, Wright, and others; but the brilliant achievements of the latter investigator have opened up new fields in therapy hitherto impossible of attainment. While Ehrlich, Buchner, Pfeiffer, and others, had shown the protective properties of immune sera, it remained for Wright to demonstrate practically the presence of bacteriotropic substances (opsonins) in the blood serum, and, by a most ingenious technic, to determine the quantity of this substance, and to show conclusively the effect of the inoculation of vaccines on its content. The nature of these opsonic bodies is of great interest. They unquestionably must be classified along with other bacteriotropic bodies, which are known to exist: e. g., antitoxins, agglutinins, precipitins, and lysins. This theory can be very well reconciled with the fundamental principles of the schools of Metchnikoff and Ehrlich, and they would appear to have a similar function to fixatives or amboceptors, in that they either have a chemical affinity for both bacteria and cytases, or they sensitize the elements to the fermentative action of the cytases.

The practical application of this discovery to tuberculin therapy is not far to seek, and the events which follow the inoculation of tuberculin can be best given in Wright's own words, which I quote from a communication to the Royal Medical and Chirurgical Society:

"Upon the inoculation of the vaccine there supervenes a period of intoxication which is characterized by a decline in the anti-bacterial power of the blood. This 'negative phase' is more or less accentuated and prolonged according as a larger or smaller dose of the vaccine is inoculated. In the former case the 'negative phase' may disclose itself to clinical observation by a temperature reaction and constitutional disturbance. In the latter case the 'negative phase' may be quite unaccompanied by clinical symptoms. Upon the 'negative phase' there follows a 'positive phase.' This phase, whose characteristic

feature is an increase in the antibacterial power of the blood, corresponds to a period of increased resistance. The curve whose trace sets forth the changes in the antibacterial power of the blood, runs up in many cases into a sharp peak and sinks away first comparatively rapidly and afterwards more slowly. There is associated in many cases with the climax of the 'positive phase' a sense of increased physical vigor and a very pronounced feeling of well-being. After the negative and positive phase, which train of events I have ventured to speak of as the 'ebb and flow and reflow of the tide of immunity,' the blood may be maintained for a variable period at a somewhat higher level of antibacterial power than before inoculation. Or, the antibacterial power of the blood may over and over again fall back after ten days or a fortnight to the level at which it stood anterior to inoculation."

By means of successive inoculations of tuberculin, at intervals governed by the opsonic index of the patient, which is arrived at by the comparative content of opsonins, with that of serum from a normal individual, the amount of these bacteriotropic substances is continuously increased until it is considerably in excess of that of the normal person. I do not wish to enter in detail into a consideration of the technic of opsonic observations, for the literature has been replete with it during the past year, but this paper would be very incomplete if the question of its practical applicability were not freely discussed. I do not believe that any one who has had the privilege of visiting Wright's laboratory and seeing the work there, can fail to be convinced of the accuracy of his methods, nor can the statement be gainsaid that we have in this method an accurate way of determining the amount and interval of tuberculin dosage. I do not believe, however, that Wright's method can be of universal application in clinical work in private practice until the elaborate technic necessary has been very much simplified, and as Bulloch, who is probably Wright's most enthusiastic disciple, has well said, the performance of the procedures advocated by Wright requiring time, skill, and the use of a laboratory, the problem will perhaps best be solved by our great hospitals undertaking, to a large extent, work of this class. An element of danger also exists in the fact that inaccurate results will necessarily be recorded unless the work is entrusted to skillful laboratory workers—results that will be fraught with serious consequences; for that the possibility of error is great, no one who has had any practical experience with the opsonic technic will deny. These facts place a limitation on the practical value of Wright's findings as a guide to therapy.

Again, considerable confusion exists regarding the classification of several bacteriotropic substances, found in the blood, and the relationship of opsonins to some of the other anti-bacterial bodies has not been sufficiently determined. It is reasonable to suppose, and indeed it can be demonstrated, that injections of tuberculin cause an increase of agglutinins as well as opsonins, and at the present time I am engaged in experimental work with the purpose of utilizing the agglutinins as a guide to tuberculin dosage, by a technic more simple, and therefore with less element of error, than the more elaborate technic of Wright.

Uhl has been applying Arneth's methods of classification of the neutrophile leucocytes, as a means of tracing the progress of tuberculous processes under tuberculin treatment, at the Edmundsthal Sanatorium in Germany, with satisfactory results. Arneth, in a recent exhaustive monograph, has described his studies of neutrophiles in infectious diseases including tuberculosis, and gives a resume of his investigations in the latter disease. He adopts a classification of neutrophiles dependent on the number of nuclei, the cells with the more complex nuclei being considered the riper and more efficient ones. By an adaptation of this classification he has been able to demonstrate the relation between the course of the disease and the blood picture, and in this way applies the latter as an index of the defensive and protective efforts of the body against the infection. This work has been elaborated by Klebs of Chicago, who made a very thorough report at the last meeting of the National Association for the Study and Prevention of Tuberculosis.

Whatever the ultimate outcome of Wright's technic may be, however, as a guide for the administration of vaccine, his researches and magnificent achievements have done much to remove tuberculin therapy from the realm of empiricism, and have absolutely demonstrated its definite scientific value in treatment. In doing this he has demonstrated the fact that the greatest yield of protective substances is not produced by dosage sufficient to cause constitutional disturbance, and that the capacity of the organism for immunizing response is limited. In this light the failure of large doses of tuberculin is made apparent, and any dose sufficient to cause febrile reaction can only be looked upon as injurious.

As has been said above, it is with the recognition of the fact that the body must become immune to the entire bacillus and its products, that the present day conception of specific therapy had its inception. Buchner has clearly shown that some of the immunizing property seems to be in the albuminates of the bacterial cell. The specific poisonous substances found outside the parasites in the culture fluids are not identical with the protective substance occurring in the disease germs, or their metabolic products. Admitting this, we must necessarily turn from the products of bacterial cultures, such as old tuberculin, and look to those products which contain the endogenous toxins of the bacillus, for immunizing and curative properties. The studies of Koch, Behring and Pearson in bovine immunity produced by the injection of living human bacilli, and the same experiments by Trudeau on smaller animals, bring us back to the old principle first brought out by Pasteur in 1880 in his studies of protective inoculation toward fowl cholera. Theobald Smith and others, however, have shown the immunizing value of injections of killed bacilli; and it is significant that Behring, in his announcement before the Paris

Congress, stated that his experience had led him to a definite determination to abstain from introducing into the human body, for any therapeutic purpose, living tubercle bacilli.

At present it is unknown which substances of the bacillus plays the most important and decisive role in arousing the defensive reaction of the body, and hence the necessity of using such product as contains them all. Of the different preparations, my own experience during the past four years has been principally with Koch's T R, and von Ruck's watery extract of tubercle bacilli. The former consists of an extract of the ground unheated bodies of tubercle bacilli; the latter consists of the pure tubercle proteids dissolved out of the bacillary pulp by sterile distilled water after the fats have been extracted by sulphuric ether.

No more auspicious occasion could have been chosen than that of the meeting of the International Congress at Paris in 1905, when the eyes of the medical profession were steadfastly turned to that notable gathering, for the announcement to come from Behring, of the discovery of the existence of a curative principle depending for its activity upon the impregnation of the living cells of the organism by a substance proceeding from the virus of tuberculosis, and which he designated T C. When the T C has become an integral part of the cells of the organism, and has been matamorphosed by these cells, he designates it by the formula T X. In order to free the T C from substances which hinder its therapeutic action, he distinguishes three groups of bacillary substances, which he removes from the bacillus. It is then, from the remaining body, or "restbacillus," which it is claimed still retains the form and staining qualities of the tubercle bacillus, that the specific body T C. is obtained. No therapeutic results have as yet been reported from the use of this preparation.

Maragliano, who has been working for several years on the possibility of producing passive immunization by means of the milk of immunized cows, has succeeded, by means of inoculations of the filtrate of living and virulent tubercle bacillus cultures and bacillary pulp, into cattle, in producing a serum which protects experimental animals against the poisons of the tubercle bacillus, and also against the tubercle bacillus itself in pure culture, when given in doses which do not overwhelm the animal, but which have been shown to be fatal. The curative value, however, has not been sufficiently established, and results reported from the Phipps Institute from its use have not been promising.

Marmorek, then connected with the Pasteur Institute, in 1903 produced a serum for vaccination and treatment, based on the theory that tuberculin was not the specific toxin of the tubercle bacillus; hence it was impossible for it to elaborate specific antibodies for that bacillus. Marmorek's serum is prepared by injecting horses with cultures grown on such culture media as, in the opinion of the inventor, produced the specific toxin, almost to the exclusion of tuberculin. While good results have been claimed by some, the serum has been severely condemned by French investigators. Prof. Hoffa of Berlin has, however, been very recently getting good results from its use in bone and joint tuberculosis, having reported forty such cases, the majority of which have been most beneficially influenced by the use of Marmorek's serum.

Dr. Baldwin has truly said that "ignorant haste, both in its use and condemnation, characterizes the history of tuberculin treatment," and this is particularly true as regards the selection of patients suitable for treatment. I believe it should be an axiom that tuberculin has no place in the treatment of acute cases of tuberculosis, for in such the machinery of immunization is paralyzed, by continuous auto-inoculations of toxins from the foci of infection. In all pyrexial cases it should be our aim to bring the infection to a condition of a purely localized infection by rest in bed and other appropriate methods. When this has been accomplished, we should endeavor to substitute for the inappropriately adjusted, and inappropriately interspaced auto-inoculations which wore down the patient without achieving effective immunization, a system of appropriately adjusted and appropriately interspaced inoculations of a tubercle vaccine. The greatest benefit from tuberculin treatment will be found in early cases, and in those chronic cases which, with a fair amount of disease, and a fair amount of cirrhosis and healing, are however stationary.

It will be urged by the opponents of tuberculin therapy, that this remedy possesses no advantages over the hygienic, open-air methods whereby natural immunizing results are acquired; that the curability of tuberculosis by nature's methods is daily demonstrated on the autopsy table on subjects who have died from other causes; that the magnificent results obtained in Sanatoria by prolonged open-air methods attest more eloquently than arguments of speech, the efficacy of such treatment. Our knowledge of the pathology of tuberculous lesions, and of the nature of the tubercle bacillus, must convince us that the chronicity of this disease is due to the difficulty with which specific toxins are liberated. The latency of tubercle in the tissues is, I believe, frequently the condition that is mistaken for cure in those discharged from Sanatoria; for large numbers of "cured" Sanatorium patients, where hygienic measures were alone carried out, have been known to have low opsonic indices. The cure of bacterial infections, tuberculous or otherwise, is not directly dependent on the breathing of fresh air, whether obtained in the arid regions of Arizona, in the balmy climate of Southern California, or in tent life at home; nor upon the deposition of fat in the tissues from forced feeding and prolonged rest. All these measures, valuable though they are, will fail, if the destruction of the invading bacteria is not accomplished, through the elaboration of the antibacterial substances in the blood.

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EARTHQUAKE SHOCK CONSIDERED AS AN ETIOLOGICAL FACTOR IN THE PRODUCTION OF MENTAL AND NERVOUS DISEASES.*

By JOHN W. ROBERTSON, M. D., Livermore.

The earthquake of April, 1906, and the social and individual disturbances based upon it are so far reaching, so many phased and, in some instances so badly distorted, that even the year which has elapsed cannot give us a full understanding of the real neurotic disturbances which can be properly charged to it.

It cannot be doubted that there was an absolute mental effect produced on the great majority of those who experienced this shock; and that this was intensified by the terror of the subsequent conflagration on those who were compelled to participate in the refugee environment; but just what part is to be attributed to the fright and what to the personal loss and the changed condition of social life is difficult of analysis.

It seems certain that, immediately following the earthquake and properly to be attributed to it was a condition of nervous shock—of a mental state bordering on stupor; possibly best described as a depressive condition having, as a pathological basis, a change of cerebral circulation. Apparently this varied in direct proportion to the nervous temperament but even the most coolheaded were slightly obsessed. There soon followed a condition of well-being, of thankfulness that they still lived—mild excitement not so much shown by hysteria as by exaltation—a condition possibly of slight cerebral congestion. Many stories illustrative of this phase were told and seemed to be a part of every day observation of those who lived with and were a part of the San Francisco population. Some of these acts showed such complete mental unbalance as not to be compatible with sanity. Many have remarked on the curative effect of the earthquake; of paralytics who walked, chronic invalids suddenly regaining normal health and even those who had long believed that they suffered from heart disease suddenly resuming their old active life. In other words the earthquake was to many invalids a command, "Take up thy bed and walk," and while the cerebral congestion remained, immense energy was displayed and suggestive cures were possible.

The mental attitude of the whole population was reported to be one of exaltation. Though the vrst day had shown the immensity of the catastrophy and the three days' fire added to its terror, there were but few reports of breakdowns, of mental depression, or any real consciousness or appreciation of the great danger which certainly did exist and was patent to all. In spite of the calamity very many treated it as a huge joke, were hilarious and, if they felt disturbed, gave no outward sign. These acts were often regarded merely as an evidence of buoyancy, hopefulness and untamable spirit of the San Franciscan—not as a pathological brain strain.

Many assertions have been made regarding the causatic influences of the earthquake and its attendant ills on the production of insanity. It must be remembered that mental alienation cannot be produced at will, that the normal brain does not easily give way to stress and that, in all cases, we suppose as a basis of insanity not only a nervous diathesis but a predisposition to that form of nervous instability which has for a basis disturbed cerebral circulation. This fact is overlooked by many committing physicians, and our asylum records are rendered worthless, etiologically speaking, because of this misconception. If the brain, by inheritance, be unstable, any disease of any organ may cause mental unbalance. We practically ignore the emotions as predisposing factors, though it may be true that, in a brain weakened. these may act so profoundly as to either hasten or actually precipitate insanity. As a rule disturbance of the emotions is merely the first symptom.

Beyond question, in certain patients already mentally weakened, active brain disease was induced by the fright, worry and discomforts experienced during the earthquake disturbance; yet the vast number for which this is assigned as a cause has no basis in fact.

Study of the records does not bear out the fact of increase. Taking the statistics as furnished by individual asylums, that of Southern California has been ignored as not being in the earthquake zone, nor can Agnews be considered because of its total destruction.

Dr. Stone, Superintendent of the State Hospital at Napa, reports 266 patients admitted during the year 1905; while for the year 1900 there were 334—an increase of 68 for the earthquake year.

Dr. King of Mendocino also reports an increase of 42, there having been 236 admissions in 1906 and only 196 for the preceeding year.

Dr. Clarke reports an increase of only 10—432 against 422. This increase could be easily accounted for by the greater number of patients necessarily sent to the other three asylums because of the destruction of Agnews. Yet we find that of the 120 increased admissions, 69, or 60 per cent,

* Read at the Thirty-seventh Annual Meeting of the State Society, at Del Monte, April, 1907.

are charged to the first four months of 1906, preceding the earthquake.

Dr. Wadsworth, who is connected with the Board of Insanity Commissioners in San Francisco and who was personally conversant with conditions existing at the time of and following the earthquake, writes: "As to the earthquake as a cause of insanity, in my opinion very few if any became insane on that account; but some people who were not *perfectly* normal before, particularly old people, lost their minds, became confused, could not remember where they had lived or what relations they had, and it was necessary to provide for them. It would be impossible for me to state what proportion were made insane by the shock; should say only a very few as a primary cause."

A study of the complete records as furnished by Dr. F. W. Hatch, State Superintendent of Hospitals, which covers reports from all asylums, public and private, does not bear out the fact of increase.

From January 1, 1905, to January 1, 1906, 1448 patients were admitted; while from January 1, 1906, to January 1, 1907, there were only 1321, a decrease of 127 patients. It is hard to account for this decrease, except on the theory that 1905, which shows a phenomenal increase over the years preceding, was an exceptional one and did not properly represent the average yearly admissions.*

While it is probable that many people were sent away from California, yet not in such numbers as to justify this decrease. It is certain that many patients were sent to asylums because of changed family circumstances following the earthquake, even where the earthquake itself was not etiologically responsible.

Dr. Stone, in discussing the Napa report, says that "Eighteen who were committed during that period had as causes of their mental disturbance, the effect of the recent earthquake.

"I found that a large number of patients who were sent to the hospital, in which the cause was alleged to be due to earthquake shock, were those who had for some time previous been suffering from mental disturbances, and who in time would have found their way into our institutions. The shock of the earthquake only hastened their commitment.

"I also noted that a number of patients committed during that period were those who had been deprived of the use of alcoholic stimulants, while in other instances, a number of cases showed that the patients had never indulged in the excessive use of alcohol previous to the earthquake. A great many cases are in this hospital who had for a period of years been cared for at the homes of their friends and relatives. After the fire these relatives found themselves destitute and without homes, and it therefore made it necessary for them to provide a place for the care of those unfortunates.

"Several cases committed to the hospital during that period were in the early stages of paresis, and would no doubt have been able to carry on their work for some time to come before breaking down completely, had it not been for the fire and earthquake. In these cases, the disease was progressing, and it only required the severe shock to hasten matters which made them a care in our hospitals.

"Three cases among the female patients who were admitted gave birth to children about the time of the disturbance, and the severe shock in connection with childbirth no doubt produced the mental disturbance which was only of a temporary character, and those patients were not in the hospital over thirty or sixty days.

"A number of old people who were committed were, previous to the fire, suffering from senile dementia, and the shock taken in connection with their general physical condition, had a serious result, making them more helpless mentally."

Dr. King says: "Upon a careful analysis of these cases, 117 males and 69 females, we find but 12 cases, 2 males and 10 females, where the cause of mental derangement can with any degree of propriety be attributed to the shock of the earthquake and fire on the 18th of April, 1906, and following.

"Thirty-two cases were said to be from hereditary and probably many more if it were possible to get a complete family history of these cases.

"The causes of the remaining cases given in the commitments, corrected by careful investigation after the patients had been received at the hospital, are the usual causes alleged in the production of mental trouble. I am a firm believer in what seems to me to be an undisputed fact, that insanity is a result of physical disease of the brain, and I am unable to conceive how a healthy normal brain can succumb to insanity. Certainly overwork, worry from loss of friends or property could not produce insanity without first producing some physical changes in the brain cells.

"I do not think that the shock of earthquake and the consequent loss of property and the worry and excitement following the incident thereto was a very potent cause of insanity; that these things may be exciting causes acting upon persons who have inherited from their ancestors neuropathic, unstable nervous systems is more than probable, but the real cause is the underlying neuropathic constitution."

While it is not probable that there was any close direct etiological relation due to the earthquake and the social upheaval following it, it is very certain that in another way its evil influence was great and is steadily progressing, and that many cases of nervous and mental breakdown can be justly based on changed conditions resulting from the earthquake disaster.

I meet on every hand profound functional neuroses, especially in the middle aged and old. There is a lack of nervous resiliency, a weakening of the recuperative faculties, mild neurasthenic conditions

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* ADMISSIONS—

Year ending June 30,		
1895.....1073;	1896.....1145
1897.....1200;	1898.....1160
1899.....1183;	1900.....1211
1901;.....1219	1902.....1271
1903.....1299;	1904.....1283
1905.....1517;	1906.....1424

which are slowly developing into profound neuroses. The sudden changes of fortune, the immense difficulties to be overcome, the confusion consequent upon changed commercial conditions, have made the middle aged old and have tried to the utmost the reserve strength of the younger generation. The improvised cook stoves, the darkened house and even tenting on the camp ground lost their novelty and added to the depressing influence of the surrounding desolation. Upon the aged, the nervously weak, the millionaire reduced to the ranks, and on th hardworking citizen, who with those depndent on him, suddenly facing poverty, the effect has been more lasting. It is impossible to tabulate or to so reduce these facts as to have statistical value, yet it certainly is proving a serious factor, and it is possible that more nervous breakdowns will be attributed to 1907, than has been tabulated for the year 1906.

I find many men no longer equal to their old burdens, apparently not able to keep the pace they once set and resorting to alcohol to stimulate their flagging energies—unequal to the strenuous life.

While the days following the earthquake tried the nerves of the strongest with its pitiful scenes, its demands on even the weakest and its real suffering on all, it was not an unmixed evil. We who are a part of its active life see much to gratify our civic pride. A new city free from the blight of the old Chinatown, Tar Flat and the Barbary Coast, certainly freed from the old bubonic taint; cleaner, better built and morally regenerated. We shall remember with pleasure the self-sacrifice, heroism and true humanity that characterized the darkest days, and will have no shame when our own part in this time of trouble becomes a part of medical history. Certain it is that the disaster was bravely borne and that misfortune cemented the many conflicting elements into one solid phalanx working for the public good, forgetful of individual intents in the attempt to safeguard the homeless and helpless.

ANALYSIS OF THE STOMACH CONTENTS; INDICATIONS, FAULTY METHODS AND WRONG INTERPRETATIONS.*

By BOARDMAN REED, M. D., Los Angeles.

In what cases is it necessary to have the stomach contents examined? Manifestly in all those with symptoms referred to the stomach which are not improved after a few weeks of treatment, dietetic and medicinal, prescribed at a venture. The phrase, "at a venture," is used advisedly, for the aberrations of secretion which play so large a role in the diseases of the digestive system cannot be diagnosed with any approach to certainty from the symptoms alone; and the motor derangements also are most accurately measured by taking up the gastric contents at certain intervals after a test meal.

Symptoms referred to the intestines call for a study of the gastric chemistry and motility quite as much as those which seem to involve the stomach only. Even when a disturbed bowel function is primary, as in constipation with secondary stomach trouble, it is most important to learn in just what way and to what extent the stomach is implicated to insure a proper choice of remedies. But when a diarrhea is directly dependent upon a deficiency of the gastric juice, or perhaps, upon an old neglected gastric catarrh which has gradually progressed downward, how are we to cure it by giving opiates and astringents or any other drugs while in ignorance of the cause? Equally impossible is it, as a rule, to overcome permanently a constipation which has resulted from any of the forms of hyperacidity, without having first discovered and remedied the fault in the stomach.

It is presupposed that in every case of chronic ill-health, especially in women, there has been an exploration of the abdomen externally to exclude displacement, dilatation, etc; then, when in the absence of any such faults or after correcting them, if present, there are gastric symptoms such as pain, eructations, vomiting, flatulent distention, etc., which do not yield to diet and a cautious experimenting with drugs, the test meal and an analysis of the gastric contents should follow. This helps much in deciding whether we are dealing with ulcer, cancer, catarrh, or a pure neurosis.

And not alone in cases in which there are obvious gastrointestinal symptoms, are analyses of the gastric contents often required. It is exceedingly common to meet with serious forms of disease in some part of the digestive system without any inconvenience having been complained of in the organ actually affected. Careful clinicians who make it a rule to examine the abdominal organs in all doubtful chronic cases, often encounter headaches, insomnia, neurasthenia, a variety of skin diseases, etc., which do not yield until some such obscure gastric, hepatic or intestinal trouble has been sought out and remedied. In illustration of this point brief mention is here made of one interesting case:

Early last January a dentist came to me from Chicago with insomnia and the worst eczema of the face I had ever seen. This had existed eight years and been ineffectually treated by numerous physicians, including the author of one of our leading works on dermatology. The patient had considered his digestion and bowels normal, but I found hypoacidity, much butyric acid fermentation and a relaxed pylorus, which allowed a mass of sour, undigested food to be propelled into the duodenum prematurely. In consequence there were offensive bowel movements inclined to be loose; also atony of the colon with too long retention of the feces, though the bowels moved usually at least twice a day. A moderate restriction of the diet and the administration of a small dose of castor oil at bed time with ten grains of sodium benzoate three times a day, in addition to the appropriate local measures and regular out-door exercise, were followed by a clearing up of the face and a return of

* Read at the Thirty-seventh Annual Meeting of the State Society, Del Monte, April, 1907.

sound sleep by the end of three weeks. The patient has remained practically free of eczema, except some threatenings of a relapse, due to imprudence in diet, and now regularly enjoys plenty of refreshing sleep.

Faulty methods: If we may judge by numerous contributions to medical journals, absolutely unreliable methods of testing the stomach contents, are largely employed. It should be manifest that in making quantitative determinations of the hydrochloric acid, we require a reagent which will not give its characteristic reaction with anything else likely to be present in the stomach. An indicator that will respond not only to HCl, but also to several of the organic or fermentation acids in such quantities as may be found in the stomach, is clearly not trustworthy. Congo red, for example, will react to even very small amounts of almost any kind of free acid, organic as well as mineral, and yet we frequently see it mentioned in medical papers as a test especially for free HCl.

Tropeolin OO is another unreliable agent which is employed in some quarters as an indicator in making the same test; and one writer has strongly insisted that it is the best of all such indicators, while at the same time condemning as untrustworthy dimethyl-amido-azo-benzol, which is the one now in most general use for the purpose. To help settle this question, I carried out a series of experiments recently in my laboratory in Philadelphia, with various dilutions of hydrochloric acid and of the different organic acids likely to be in the stomach, and also, with the help of my assistants, analyzed thirty-five specimens of stomach contents, each by three different methods—that of Mintz, with Guentzburg's reagent, of Toepher, with dimethyl, etc., and by titration with tropeolin OO. Still more recently since coming to Los Angeles, I have made a number of additional observations in the same line. The results of these experiments and observations are here summarized. They show, in agreement with the findings of most other observers, that phloroglucin-vanillin (Guentzburg's reagent) will react to mineral acids only and HCl being the only such acid to be found in the free form in the stomach, unless when some of the others are taken into it as medicine or otherwise, it affords an accurate measure of the quantity of that acid present in the gastric contents. By means of this reagent, I have been able to recognize it when diluted to the extent of one part of the officinal chemically pure hydrochloric acid in upwards of 30,000 parts of distilled water.

Aqueous dilutions of the same acid were next tested with both dimethyl, etc., and tropeolin OO as indicators and, comparing one with the other, they proved to be about equally sensitive to it, both responding to a dilution of one part in 20,000, though the color change was a little more marked at this dilution when the dimethyl, etc., was used.

Tests were also made of the comparative sensitiveness of these two reagents to solutions in water of the free organic acids which may occur in the stomach. Tropeolin OO proved to be more sensitive to most of these than dimethyl, etc., and, therefore, would be likely to be less trustworthy as a means of measuring the proportion of free HCl when mixed with organic acids in the gastric contents.

Dimethyl-amido-azo-benzol was shown by these experiments to be quite sensitive to lactic acid, reacting to one part of it in 750, but very little so to the other organic acids in aqueous solution. In the tests, however, of numerous specimens of stomach contents, this reagent as compared with Guentzburg's gave almost uniformly somewhat higher figures and in the case of those showing by their odor much fermentation, the difference was so marked as to make the results of the former very misleading. Hence, since completing these investigations, I have made it a rule in important cases, including generally the first analysis and especially in examining gastric contents, the odor of which points to excessive fermentation, as well as those in which there is a suspicion of cancer with much lactic acid (which has no marked odor), to confirm the findings as to free HCl, by making also the quantitative test with the Guentzburg reagent. This takes much more time, but the results can then be depended on.

Tropeolin OO, on the other hand, while it proved extremely sensitive to the organic acids in aqueous solution, and also to a like solution of free HCl, gave abnormally low values for the latter in actual tests of gastric contents. In two, only, of the thirty-five analyses did it give values for that acid as high as the Guentzburg reagent. In fifteen of them in which the same acid was shown to be present by the accurate Mintz method, none or a trace only was found with tropeolin as the indicator. The latter is thus proved to be utterly valueless as a test for free HCl. Experiments are lacking to show why it responds so differently to aqueous solutions of the free acids and the same when mixed with the gastric contents. It is likely that the albumen and peptones in the latter interfere in some way with the reaction.

Wrong Interpretations: Attempting to judge of the gastric secretion by the results obtained from a mere qualitative test for free HCl, or from this and a quantitative determination of the total acidity alone, is not only depending upon a faulty method, but also involves a wrong, or at the best, a doubtful, interpretation. Such meager data do not warrant any conclusions upon which a diagnosis could be surely based, though they give partial information which may be helpful at times. A positive reaction for free HCl, even with a correct method, may occur when there is a marked deficiency of that acid in the aggregate, with only a minute amount of it present in the free form; and at the same time the combined HCl might be abnormally low. Or with the same findings there might be a marked hyper-chlorhydria and, as is usual with this condition, a relatively small amount of the combined HCl, showing the proportion of proteids peptonized to be deficient—less than often happens when the free HCl is low.

On the other hand, the failure to find any free

HCl, may be by itself of little moment; for there is sometimes an extra large proportion of it combined with the proteids of the food, which could only be certainly shown by the quantitative test for combined HCl. This can happen especially when the specimen tested is taken up some hours after a dinner or other heavy meal. The total acidity would throw additional light on the problem for one accustomed to interpreting the results of gastric analyses, but it would be impossible for even the most expert to know just how much of the total acidity might represent combined chlorides of the food bases and how much of it organic acids and their products, unless special extra examinations were made to determine separately the amounts of these.

Just as I had finished writing the foregoing part of this paper, a gentleman called to consult me on account of a stubborn chronic constipation. Examination revealed, besides atony of the colon, a large area of infiltration in the right lung, locomotor ataxia, enlarged prostate gland, enlarged liver with a suspiciously tender gall-bladder and movable right kidney. The analysis of his stomach contents nearly three hours after a hearty mixed meal, gave as the principal findings, an entire absence of free HCl and a low total acidity—only 56—but on the other hand, the combined HCl was comparatively high—28—only a little below the normal figure for such a meal. Here the work of peptonization was comparatively good and very little of the total acidity represented organic acids. The next patient, seen the same morning, had flatulence, constipation and catarrh of both stomach and bowels. Four hours after a similar breakfast his gastric contents showed by the Guentzburg test, free HCl 38, combined HCl 16 and T. A. 60. Here the free HCl was somewhat high, the T. A. too low and the combined HCl also proportionately low, showing a comparatively poor peptonization. Both these are to be classed as cases of hypoacidity, the secretion in the latter being much more deficient than in the former, notwithstanding that there was no free HCl in the former and at least a full amount in the latter.

Thus, when quantitative determinations of both the free and combined HCl are made as well as of the total acidity, the most important factors of the problem are given, so that one with a fairly good knowledge of such work, can judge as to the secretory activity of the stomach. But without having these three factors known, a correct interpretation of the findings is often impossible.

There are other tests, also, such as those for the rennet ferment pepsin, the changes in the starch of the food, etc., which often afford additional information of value. But one not somewhat familiar with these chemical processes might well be puzzled over even full reports of such cases as the two mentioned.

The contents taken up three to four hours after a hearty mixed meal, such as a dinner or ordinary American breakfast, are capable of furnishing even more information than those obtained after the usual Ewald test breakfast, and at the same time, are still more liable to be wrongly interpreted. During the longer period any tendency to fermentation has had much more time to develop organic acidity with the tell-tale odors accompanying it. Any deficiency in peptonization will be markedly more apparent and the aggregate of the hydrochloric acid secreted, which may be learned by adding together the figures representing the free and the combined HCl, will indicate in a striking way any variation on either side from the normal secretory work of the organ. The sum of these two sets of figures should not be very greatly less, in a perfectly healthy patient, than the total acidity, the difference representing the organic acids and their salts. It should be borne in mind that the longer the food remains in the stomach, the higher normally are the values for all the elements, especially for the total acidity and combined HCl. That for the free HCl may be decreased, while the figures representing the combined HCl are proportionately increased.

Evidently, then, it is desirable when possible to introduce the tube and obtain enough stomach contents to make a number of the more important tests without which the conclusions must be liable to mislead. The ingenious devices by means of which a few drops of the gastric contents are obtained for one or two partial tests, should be regarded as makeshifts only. They are but little more satisfactory than the external method of determining approximately the amount of free acid in the stomach which has been described by me elsewhere. These easy methods are only to be recommended when it is quite impossible to obtain the necessary amount of the gastric contents for a reasonably complete analysis. To establish a diagnosis of real value in any doubtful case, not only must there be such an analysis carried out by means of reagents and methods which are unequivocal, but there needs to be also an intelligent interpretation of the findings so that they may become the basis of a proper treatment.

MEDICAL ORGANIZATIONS AND PUBLIC HEALTH WORK, WITH A SPECIAL APPLICATION TO THE MILK PROBLEM OF CALIFORNIA CITIES.

By GEORGE H. KRESS, M. D., Los Angeles, Cal.

I. THE PURE MILK QUESTION.

Several months ago, the Los Angeles County Medical Association appointed a Pure Food Committee, which committee, as its name would imply, was to endeavor to bring into being measures whereby only pure foods would be offered for sale in the community.

The first work taken up was that of pure milk. The intimate relationship between infant mortality and an impure milk supply is too well known to need repetition before this Society. It may safely be taken for granted that we are all agreed that if we could prevent the sale of impure milk, many lives

would annually be saved which under present conditions are needlessly sacrificed.

The Los Angeles committee considered the pure milk question in all its various phases, invited Eastern men who had had large experience with certified milk to appear before it, conferred with members of the Los Angeles Milk Board of Trade, heard the reports of the National, State and City Milk Inspectors, and finally, as the result of its own deliberations and the experience of the health officers of Los Angeles and Pasadena (who were two of the four members of the committee) decided to recommend to the Los Angeles Board of Health the adoption of a system of dairy inspection, as the best means of insuring a comparatively pure and wholesome milk supply for the largest possible number of people in the community.

The committee submitted to the Health Board a score card designed after the plan recommended by the Dairy Division of the United States Department of Agriculture, modified, however, to be adaptable to the peculiarities of climate and dairying in Southern California. (The United States Dairy Division score card, and the Los Angeles modification are printed as Exhibits A and B, to this paper. The United States card is a new form, which has appeared since this paper was written.)

The modifications in the score card adopted for Los Angeles were agreed upon by the Pure Food Committee and the Los Angeles Milk Board of Trade, meeting together for that purpose in joint session. As before stated the modifications in the Los Angeles score card were based largely on the fact that in Southern California the cattle may be kept out in the open throughout the year without detriment to their health. For the northern part of the state, the score card of the Uited States Dairy Bureau is perhaps better adapted. The U. S. Dairy Department at Washington will send copies of such cards to all who are interested, on application.

If you will examine the two types of score cards which are under consideration you will note on the back of each the description and value of the factors entering into the markings. A corps of inspectors taking up such a system should be trained under the same man, so that in any city, the markings will have, for all dairies and inspectors, as near the same value on each point as possible.

To return to the modifications suggested for Los Angeles, and which apply particularly to Southern California, it will be noted that instead of the second division of the U. S. Dairy Division card, entitled "Stables," we divided that section into (1) Cow yards and (2) Stables and Stanchions. This we did because the all-year-round climate of California of the South, permits the dairymen to keep their cattle out in the open without much overhead shelter. Two points in the markings of the United States card were taken away from the tuberculin-tested herd and added to the 25 points for cow yards, stables and stanchions, which is the same total as is credited to stables alone in the United States card. This was done because for the present, the cleaner stables were more possible of realization than tuberculin-tested herds.

Another modification was in regard to the temperature used in cooling milk. The United States card gives milk cooled under temperature of over 60° Fahrenheit, no points, while at Los Angeles, if the temperature be over 60° and below 70°, two points are granted. This modification was made because the greater dryness of Southern California air, and the large amount of sunlight, does not favor bacterial decomposition as in more humid localities.

The score cards both total 100 points, but 100 points are extremely difficult to obtain. In fact, to obtain 70 points or per cent, requires rather liberal treatment in the marking of most dairies. The Los Angeles Milk Board of Trade agreed not to purchase any milk from dairymen whose dairies were below 40 per cent. It is hoped also to induce the Milk Board of Trade, in time, to offer a money premium to dealers who regularly score above a certain point, say 80.

After the adoption of the score card by the Board of Health, the Pure Food Committee and the Los Angeles Board of Health went before the City Council and requested an increase in the force of inspectors from two to eight. This request was granted and in April, to the amusement of the cartoonists of the daily press, the much-talked-of milk inspectors began their work. What they will accomplish is yet to be shown. That their influence will be for decided good, is not for a moment to be doubted.

These inspectors will investigate dairy conditions, not only in Los Angeles, but will travel through Tulare, San Luis Obispo, Kern and the whole tier of Southern Counties from which Los Angeles draws its milk supply. Wherever a filthy dairy is found, the sale of milk therefrom will be prohibited in Los Angeles, a report being made at the same time to the State Dairy Deputy, who, if he finds filthy conditions as reported, will prevent the sale of milk to local creameries or cheese depots. In this way it is hoped to place such difficulties in the way of uncleanly and filthy dairymen that they will soon be glad to go out of the business. (Note: Since the above was written precisely this result has come about. The filthy dairymen are going out of business.)

To make this campaign permanently successful for Los Angeles, the co-operation of the people and health officials of adjacent counties, as well as of the State at large, is needed. To that end the speaker was delegated by the Pure Food Committee of the Los Angeles County Medical Association to bring this matter before you, and to secure if possible the interest and support of the State Society and the component county units in this important work.

What we of Los Angeles desire is a State Pure Food Commission to take up this work, for the pure food problem is not a local one. It applies with equal, yes, with even more force to San Francisco and other cities in the State where climatic condi-

tions are even more favorable to an impure milk supply. If every county and city in the State will take up this and related work, and if the County Associations and State Medical Society through their Pure Food Committees will press the matter home, we could without doubt secure more State milk inspectors and so more thoroughly back up the work of local inspection. This co-operation and support by adjacent counties is absolutely necessary, if the effort is to be more than a spasmodic attempt to better local milk conditions in our larger centers of population.

On behalf of the Pure Food Committee of the Los Angeles County Medical Association, I request therefore your co-operation and aid in this important work and your support in behalf of such a commission.

II. MEDICAL ORGANIZATION AND PUBLIC HEALTH WORK.

And now to turn from the milk question to a consideration of the title of this paper, "Medical Organization in Relation to Public Health Work," which title was handed in through a misunderstanding.

Medical organization is absolutely necessary if the hundreds and thousands of lives are to be saved that are now unnecessarily lost every year through impure water, food and milk supplies, through improper disposal of sewage, through the absence of adequate and thorough registration and fumigation in infectious diseases, through the erection of ill ventilated and unsanitary buildings, and through the existence of ignorant and pernicious quackery, and so on.

The close connection between the public health measures just enumerated and the morbidity and mortality statistics of our land has been so often proven as to need no additional comment. Those and related causes are responsible for hundreds and hundreds of deaths, that could be saved to the State if the proper legislation were on our statute books and if it were energetically enforced.

It may truthfully be said that if this Society would turn its attention to those things and institute much needed State reform in regard thereto, there would be saved many fold more lives than will be saved through what we will learn at this Del Monte session from our scientific papers dealing with topics outside the general domain of public health and hygiene.

If in addition to saving these lives to the state, an organized profession also meant a profession of higher scientific tone, of greater fraternal spirit and of increased material prosperity, then surely the indications for medical organization are great indeed.

The many problems in public health pressing for recognition in California need not be discussed here. They would receive proper attention and solution, once we were powerful enough to secure all the public health legislation we need and to demand that it be properly enforced.

But before we can hope to secure the public health laws and measures which we, as medical men, know are needed, we must as a profession be so organized and united as to impress our politicians and legislators with our power and influence with the public. Then and then only will they with alacrity give their support to measures intended to conserve the public health.

In other words, we must impress the dominating political parties and factors of the Golden State with the fact that the medical profession consists of a thoroughly organized and united group of professional men, who in civic measures related to the public health will punish with political death all politicians and legislators who, from selfish or unworthy motives, oppose sanitary and allied legislation which the best interests of the public health demand should be on our statute books and enforced.

There is no profession the members of which enter so many homes and who wield so much personal and other influence as that of medicine. Physicians know just what are our public health needs. If they will take the time to educate the public to likewise appreciate these needs, they can then, by presenting an unbroken front of medical men, with public opinion in back of them, demand and obtain from the politicians of the State everything needed in public health legislation or in the enforcement of sanitary laws. Politicians and officials mean to do the right thing, and with public opinion supporting them are only too glad to give the public what it wants. What is needed is a guiding force to public sentiment in public health matters. Logically, that guiding force is the medical profession.

It may be interesting, in connection with a discussion of this subject of organization, to consider for a few moments the status of medical organization in our own State of California.

According to the late Dr. R. H. Plummer, the first medical society of the State of California was established in 1856 by Thomas M. Logan, of Sacramento, and Elias S. Cooper, of San Francisco. Their society died in 1861 from internal dissensions. In 1870, Dr. Thomas M. Logan, secretary of the newly created California State Board of Health, issued a call for a reorganization of the State Medical Society in San Francisco, forty-six members attending (28 being San Franciscans) and thirty-one new members applying for admission. In 1871 the American Medical Association met in San Francisco, seventy-two new members joining the State Society at that time, making the total enrollment include more than one-half the practitioners of the State.

In 1880, with a State population of one million, there was a total society membership of 200; in 1885, with a population of 1,350,000, a Society membership of 350. At that time the State supported twenty-two local societies, there being a total of 1700 registered regular physicians, of whom 350 were members of the State Society.

Of San Francisco's 370 regular physicians, one-half, or 152, were members of the State Society.

Los Angeles at that time, with a population of 80,000 people and 200 registered physicians, was represented in the State Society by only eleven members, its County Society consisting of forty members.

At that time our State Society was largely a San Francisco organization, the result on the one hand of difficulty of travel from place to place, and on the other of the rather loose general organization which failed to bring the more distant members in direct association with the State Society.

According to our present Secretary, at the time of the reorganization of our State Medical Society on the American Medical Association basis in 1904, the membership was about 300, or some fifty less than it was twenty years previous. As a result of the reorganization on the county unit basis, the membership increased to 1575 in 1905, which number, according to the register of 1906, has since increased to 1821, the total number of registered physicians of all schools being 4023.

There are some 57 counties in California, and in only 36 of these are County Medical organizations, leaving 21 counties, or about 33 per cent. without any direct representation in this Association. Here then is a fertile field for present and future work in extension.

Not to be forgotten also, is the intensive growth or increased development of the county medical associations already in existence. The beneficent effects to county medical units of organization on the American Medical Association basis is well shown in the history of the Los Angeles County Medical Association. Before its reorganization some three years ago that organization was leading a precarious existence, having a membership of about forty and holding monthly meetings at which there was an average attendance of about fifteen to twenty. Today that same society has a membership of almost 400 members, maintains weekly meetings in the city of Los Angeles, with an average attendance of 55 to 65, has two sections in the specialties, and is credited with three prosperous branches in nearby cities. Since the beginning of this year more than twenty members have been added to the membership roll, and the campaign is on to enroll every eligible practitioner of non-sectarian medicine in the county.

What has been responsible for this remarkable growth? Largely the fact that the county medical unit, with associated membership in State and national organizations, is the logical basis of any rational and comprehensive scheme of medical organization.

It is an old saw which says, "Nothing succeeds like success," and nowhere does the saying apply with more force than in medical organization work. Each new society, and each additional meeting or section in a specialty or in a nearby town, benefits not only the immediate membership, but acts as a reflex tonic to all other phases of organization work.

To recapitulate concerning Medical Organization and Public Health Work:

There is annually a vast and unnecessary sacrifice of life owing to the fact that an ignorant or uninformed laity, or vicious vested interests, prevent the public health legislation which the medical profession knows should be on our statute books.

The medical profession fulfills its highest functions to humanity and the state when it prevents unnecessary disease and death.

If the medical profession of California would have brought into being and enforced the public health legislation which we know should be among our laws, more disease would be prevented, and more lives would be saved to our State, than we will be able to credit in all probability to the increased amount of scientific facts which will be added to medical and surgical knowledge during the coming year.

This public health legislation can be brought into existence only when an organized medical profession educates the public in regard thereto, so that public opinion will be so great that the politicians will be only too glad to give the people what they want.

A united and organized medical profession will, however, do more than this. It will induce also a greater scientific development than can be existent in an unorganized profession, and this because, in a condition of disorganization, only the true students strive after increase of scientific knowledge, whereas in the organized profession, the influence of these students and the effect of association with one's professional fellows is such, that the striving for intellectual and scientific progress becomes general, all who come within the sphere of the organization influence being benefited.

Organization means, then, more disease prevented, more lives saved, a more scientific, and a more fraternal and a more prosperous medical profession; in fact, the very things which are the ideals for which we should and do stand.

Is not, then, the perfect organization of the medical profession of California the paramount question and issue before us?

SYMPTOMS AND DIAGNOSIS OF HIP JOINT DISEASE.

By P. C. H. PAHL, B. S., M. D., Los Angeles.

Hip Disease in the Infant—We have four distinct varieties of hip joint inflammation; the tubercular, gonorrheal, syphilitic, and inflammation following the various acute infectious diseases and other organisms.

In early infancy, tuberculosis is very rare and an inflammation of the hip joint at that period of life practically excludes it. Gonorrheal inflammation usually follows in the steps of opthalmia neonatorum, urethritis or vaginitis; there are cases on record where the joint discharges were proven to be gonorrheal. The infection was thought to have entered the general circulation through a gonorrheal stomatitis or infection through the air passages. The symptoms are very acute pain, swelling, restricted motion and mal position.

The syphilitic variety, sometimes termed pseudo-

paralysis, has an altogether different clinical picture. The swelling is usually well marked, some pain and interference with mobility, but no rigidity; the limb hangs motionless and limp to such an extent that the condition has frequently been mistaken for anterior polio myelitis. In the syphilitic variety anti-leutic measures do wonders and are a factor in the diagnosis. If the diagnosis is not made, however, the condition invariably leads to suppuration and destruction of the joint. In later life, one frequently recognizes these cases by the peculiar white bulging and ragged scars, shortening and mal position of the limb, due to contractures.

In those cases in which the pneumococcus, bacterium coli, streptococcus and other organisms are found, the symptoms are very similar to the gonorrheal variety, but much less virulent in nature. In this and the gonorrheal variety the symptoms usually abate in from one to two months' careful treatment on a Bradford frame with slight elastic traction; there may, however, in two to four weeks after the onset, be a slight evacuation of a cero purulent discharge of the joint. These cases will have to be carefully dressed with mild antiseptic packs in conjunction with the Bradford frame treatment. The mortality is very high and a grave prognosis should be made.

It would be an easy matter to imagine the bacterium coli to be responsible for many cases, for it is more than probable that frequently the hip joint receives a trauma during a difficult labor, which would make a very suitable soil, if there should exist an auto infection due to some digestive disturbance which so frequently exists in the new born.

Hip Joint Diseases in Children—I have observed several cases of hip joint disease in children, following parititis, which proved to be non-tubercular. Tubercular hip joint disease occurs almost entirely in walking children.

The symptoms of hip joint disease are obscure and are frequently mistaken for what are called growing pains, rheumatism, knee joint disease, or even a poorly fitting shoe. They consist of lameness, pain, induration about the joint, limitation of motion and slight general constitutional derangement. As the case becomes somewhat advanced there is an apparent lengthening of the limb, muscular atrophy and, frequently, night cries. The child guards the foot of the affected side with the well one, and cries when any one attempts to move it.

When the child is placed upon the table with both legs side by side and extended, a tilting of the pelvis is almost always present and is recognized by the arching of the lumbar spine. In early cases there may even be some question as to which limb is affected; this can usually be readily decided by raising first one knee and closely observing if there is any change in the position of the lumbar spines; if you raise the knee of the healthy limb there will be no change in the arched condition; if you place your thumb and fingers on the two anterior superior spinous processes you will find that the healthy limb can be moved in any direction without changing in any way the position of the pelvis. In the normal state you can place the heel of the healthy leg over the opposite hip joint. By placing one hand over the well joint in such a manner that the fingers grasp the posterior and upper part of the femur, the thumb just outside of the brim of the pelvis midway between the spine of the pubes and the anterior superior spinous process, and placing the other hand on the flexed leg, just below the knee, directing the patient to relax all the muscles as much as possible, reassuring him that you are not going to hurt him, it is possible, upon gaining the confidence of the patient, to get a very accurate idea of the normal amount of thickening of that particular child's hip joint, and you can readily determine the normal excursions of the head and neck. By alternately pushing and pulling with the hands upon the flexed leg, the laxity of the joint may be observed, a most valuable symptom in congenital dislocation as well as in those cases of tuberculosis where the head has become dislocated or where an epiphyseal separation has taken place.

Now let us examine the affected limb. We notice by carefully raising the knee that the arched condition of the spine immediately disappears. If we place the thumb and fingers on the anterior superior spinous processes and attempt to move the hip joint we find that the pelvis follows every movement of the thigh. If we again place the leg in an extended position on the table, the arching of the spine reappears. We examine the joint with one hand placed as before, the thumb outside of the brim of the pelvis, the fingers grasping the greater trochanter and posterior part of the joint, the other hand on the flexed leg; if the case at hand is a case of tubercular hip joint disease there will be perceptible changes which can be felt about the joint, such as induration, a general thickening or fluctuation. If the femur can be moved at all, the excursions of the head will be very hard to palpate. Pushing or pulling on the flexed leg, as well as rotation of the femur, will elicit pain, or, if the case is advanced and the destruction has been such as to destroy the direct connection between the femur and the pelvis, a laxity of the joint will be observed. In comparing the tension of the adductor muscles, it will be found that the affected limb is in a state of rigid contraction. An attempt at placing the heel over the opposite hip joint has been absolutely impossible in all true tubercular inflammations that have come under my observation.

The duration of tubercular hip joint diseases is practically never less than two years, and the general course of the disease has been divided into many stages, periods and conditions. Suffice it to say that in the early days of the disease the diagnosis may depend upon lameness, pain, inability to place the heel over the opposite hip joint, induration and thickness about the joint, muscular spasm of the adductors, reaction following the administration of tuberculin and an afternoon rise of temperature.

As the disease progresses and the limitation of

motion increases we get the arching of the spine; upon placing the limbs side by side we find the affected limb apparently longer than the healthy one. (See Fig. 3.) This lengthening of the limb is due to abduction; that is, motion of the joint has now entirely ceased and the thigh joins the pelvis at an obtuse angle, held there immovable by muscular spasm. The sub-spinous tissues are tense and unyielding; the adductors are in a state of rigid contraction.

When a leg has temporarily become ankylosed at about twenty degrees abduction it is easy to see that in order to place the two limbs parallel to each other it is necessary for the movable limb to accommodate itself to the immovable one; so, in Fig. 3, you will observe that the axis of the femur joins the horizontal axis of the pelvis at an obtuse angle, while the axis of the healthy limb joins the horizontal axis of the pelvis at an acute angle.

To place the limbs in a general line with the trunk, a tilting of the pelvis is necessary, and it is this tilting which gives the apparent lengthening of the limb. This stage of apparent lengthening is very transitory and disappears as the disease progresses; whenever it is encountered it is a sure indication that the onset of the disease is comparatively recent.

The tendency of prolonged irritation and inflam-

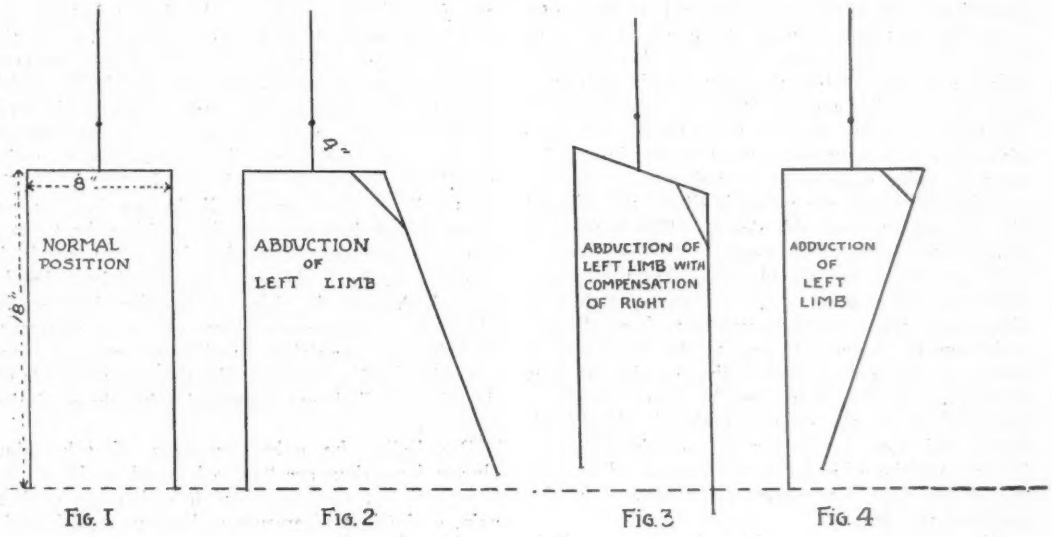

Fig. 1 Fig. 2 Fig. 3 Fig. 4

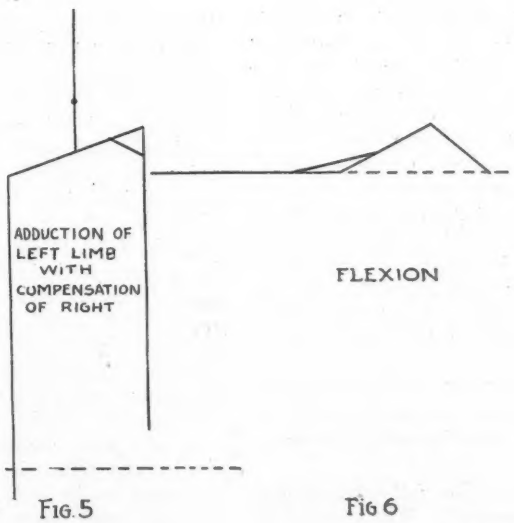

Fig. 5 Fig 6

mation of the hip joint is for the limb to become adducted and flexed, which can also be said of practically every pathological state of the hip joint, congenital dislocation, traumatism in the adult, fractures of the neck and coxa vara. The condition is very readily explained; inflammation causes muscular spasm wherever it occurs in the body, as seen in appendicitis or in an infected gall bladder. A general spastic condition of the muscles of the hip joint causes adduction and, frequently, flexion, because the adductors are many times as strong as the abductors and moderate flexion of the hip joint relaxes practically all of the muscles about it. This is one of the conditions which we have constantly to combat in the treatment of the disease. Adduction gives the opposite result to abduction; that is, apparent shortening. (See Fig. 5.) The axis of the femur joins the transverse axis of the pelvis at an acute angle; all motion is absolutely lost through muscular spasm and, when the limbs are brought parallel to each other and placed in a general line with the trunk, it again becomes necessary for the movable limb to accommodate itself to the immovable one; the spine accommodates itself also to the immovable joint and the pelvis is tilted, the affected side up and the well side down. This is the real cause of the apparent shortening. (See Fig. 5.)

It is to be distinctly understood that the lengthening and the shortening is only apparent; that, in either case, the actual measurements from the anterior superior spinous process to the internal malleolus, are the same in both limbs, but the apparent shortening can be determined by measuring from the umbilicus to the internal malleoli. If the affected limb measures longer than the healthy one, it is in a position of abduction; if shorter, adduction; the degree depending upon the difference in the length of the limb.

When treating a case of hip joint disease it is interesting to know the amount of abduction or adduction present. This knowledge is obtained in several ways—one by the use of an instrument known as a goniometer, which is placed, one limb over the transverse axis of the pelvis, the other following the axis of the limb. The number of degrees of abduction or adduction can then be read. Another method is by using "Lovett's Table," which is given in all modern text books.

Flexion—The amount of flexion can readily be determined by placing one limb of the goniometer on the table, the other in the axis of the femur, while the limb is held in such a position that the lumbar spines touch the table. Another method is by the use of the "Kingsley's Table," which can be found in the text books.

Next to adduction, flexion is the most troublesome symptom and requires constant attention in order to keep the leg from becoming deformed. (See Fig. 6.)

Method of Measuring—The following method is a generally accepted standard: The anterior superior spinous processes are located and the skin is marked; next the upper margin of the patella is found and marked on the skin. With a tape the distance between the patella and the anterior superior spinous process is determined. This distance is divided in half, and wherever that point may be the thigh is marked. Next the internal malleolus is marked. Both limbs are marked alike.

To facilitate the work, certain abbreviations have been accepted; for example, in measuring the right limb the first measurement, after the limbs have been placed side by side on a level surface, is from the anterior superior spinous process to the internal malleolus and is designated by R. A.; the next measurement, from the umbilicus to the internal malleolus and is designated by R. U.; the next, the circumference of the thigh, which is designated by R. T.; the circumference of the knee by R. K.; the circumference of the calf by R. C.; A. G. E. indicates the angle of greatest extension; A. G. F. the angle of greatest flexion. A. S. P. distance between anterior superior spinous processes, and R. B., which indicates Bryant's line, the distance between the level of the anterior superior spinous processes and the top of the great trochanter. It is customary to write the R. A., R. U., R. T., R. K., R. C., A. G. E., A. G. F., A S. P. and R. B. in one line, leaving space enough between each for writing the figures. The measurements of the left leg, which are indicated by L. A., L. U., etc., are placed immediately beneath those of the right, so that the difference in different measurements becomes very apparent. This is most essential, as the different measurements are only relative; for example, the measurements of the diseased limb are compared with those of the healthy limb.

Practically the only symptoms of tubercular abscess formations are fluctuation and swelling. It is usually not until a mixed infection occurs that pain, a rise in temperature and symptoms of sepsis manifest themselves.

TWO ANOMALIES OF THE SIGMOID COLON RESEMBLING DIVERTICULA.

By J. C. BLAIR, M. D. (From the Hearst Anatomical Laboratory of the University of California.)

Much work has been done of late upon the topographical relations of the various abdominal organs, and many points of theoretical and practical importance have been brought to light. One result of this work has been to emphasize the great variation which the different segments of the large intestine present both in form, position and size, and especially is this true in those of the sigmoid segment. This portion of the intestine, with its long mesentery, its narrow base and consequent freedom of motion, shows by far the greatest departures from the normal and offers many diagnostic difficulties.

Diverticula of the intestine are also attracting more and more attention, both medically and surgically, and although the following two cases do not prove to be fully developed diverticula, they still offer some points in the development of these conditions which may be of sufficient interest to warrant their presentation.

Case I. This specimen was obtained from the dissecting-room and its history from the records of the City and County Hospital of San Francisco.

History: W. E. Laborer, age 57. Was admitted to the wards June 12, complaining of general weakness and vomiting. Two and one-half months previous to entrance he had noticed that his legs were weak and that it was impossible to stand. There was considerable enlargement of the abdomen. He had irregular attacks of vomiting, at times of bile, but no blood. He had not passed any blood per rectum since having dysentery.

Examination: Physical examination showed an emaciation of moderate extent. The right lung was partly consolidated. The upper border of the liver was in the fifth intercostal space, the lower four inches below the costal margin in the midsternal line. The abdomen was distended and tympanitic, but no ascites. There was a distinct bulging over the left lobe of the liver and the liver area was tender. The vomiting ceased after the administration of calomel and the patient felt much improved, but death occurred June 17th.

Diagnosis: Carcinoma of liver.

Autopsy: On opening the abdomen there was no evidence of a recent peritonitis. The omentum was free with the exception of old adhesions in the upper left quadrant. The peritoneum over the caecum and ascending colon was white and thickened. The liver was considerably enlarged, reaching eight centimeters below the costal margin in the right mammillary line; border sharp, regular and firm. The cut surface showed a uniformly granular appearance with no tumor mass. The caecum and ascending colon were normal in position, while the transverse colon was distended and arched downward seven centimetres below the umbilicus. On the left it passed upward and disappeared beneath a mass of adhesions and matted omentum in the region of the splenic flexure. In its further course the intestine emerged from beneath these adhesions in two parallel segments, an outer A and an inner B, which passed downward toward the pelvis, both lying to the left of the vertebral column. (See figure.)

The inner segment B passed downward and to the right, crossed the brim of the pelvis at the left sacro-iliac junction and continued directly into the rectum, its course thus corresponding approximately to that of the descending colon. It had no mesocolon and was firmly attached to the posterior abdominal wall. Its lumen was about five centimetres in diameter, being slightly narrowed at the distal and proximal ends. The outer segment, A, was situated at the junction of the posterior and lateral walls of the abdomen and appeared as a blind pouch or diverticulum, derived from the splenic flexure of the colon and whose fundus lay in the left iliac fossa. Like the inner segment it had no mesocolon. Its length was fifteen centimetres and its diameter four centimetres. Its fundus was about three centimetres to the right and above the anterior superior iliac spine.

Surface markings: On the transverse colon, the appendices epiploicae (a. e.), the anterior taenia (a. t.) and the attachment of the great omentum occupied their normal relative positions. As will be noted in the accompanying figure, the line of appendices epiploicae was continued on the left into a broad, thin fibrous band (c) which stretches between the transverse colon and the anterior surfaces of the two segments.

Upon the inner segment (B) two taenia were visible. At the inferior extremitv their fibres began to spread out upon the intestine and finally completely encircle it where it crossed the brim of the pelvis. Transverse fibres were visible in the whole extent. The appendices epiploicae were well marked along the proximal half, but in the distal portion were represented by small fat pads closely adherent to the intestinal wall. The outer segment (A) likewise showed the surface markings of the large intestine. Its taenia remained distinct throughout.

Peritoneum: Where the peritoneum was reflected from the intestine on to the posterior abdominal wall there was formed a number of fossae. These were more numerous along the inner segment and were of varying size, some admitting the tip of the index finger to the depth of four centimetres. Along the outer segment there were no lateral fossae, but at its distal extremity there occurred three folds of peritoneum forming two fossae (f), both extending upward and backward. At the bottom of the larger fossa could be seen a well marked appendix epiploica. The space between the proximal ends of the two segments was bridged across by a broad, flat fibrous band (c) which passed from their anterior surfaces to the transverse colon. It was attached to the colon along a line in direct continuation of the appendices epiploicae. The finger could be introduced beneath this band into a small cul-de-sac about four centimetres in depth. Laterally could be felt the two segments, A and B, and fibrous bands which connected them to the transverse colon. Superiorly there was the transverse colon, while posteriorly there was a flaccid portion of intestine which apparently directly connected the proximal ends of the segments.

Where the colon was moderately inflated and each segment separately distended, it was evident that the outer segment consisted of two compartments, an anterior and a posterior, and further that the outer segment communicated with the inner through the small portion of intestine lying at the bottom of the cul-de-sac.

When the adhesions were cut and the peritoneum dissected away, it was seen that after the transverse colon disappeared beneath the adhesions in the left hypochondrium, it ran upward for about seven centimetres to the splenic flexure and then down to the iliac fossa, constituting in its lower part the posterior compartment of the outer segment. At the point where the sigmoid normally begins, the intestine turned abruptly upon itself and ran upward to the transverse colon forming the anterior compartment. At the transverse colon it turned to the right, as the floor of the cul-de-sac, bent downward and became continuous with the inner segment.

Although the two compartments were superimposed, they were separated by a small amount of loose fatty tissue in which there were a number of bursa-like spaces, some empty, others filled with a yellow oily fluid. All these bursae were in direct contact with some portion of the peritoneal lining of the intestine.

When the intestine had been freed, it was seen that the colon ran practically a normal course as far as the beginning of the sigmoid. When the remaining intestine was pulled down toward the pelvis it was found to occupy a position almost identical with that of the sigmoid.

The blood vessels of ths portion had a significant arrangement. The descending colon and sigmoid flexure are normally supplied by branches of the inferior mesenteric artery, which are three in number.

(1) Left colic artery, whose branches anastomose with those of the coliea media and with the sigmoid arteries.

(2) Sigmoid branches.

(3) Superior haemorrhoidal, which is the continuation of the main artery upon the rectum.

In this case, however, it was found that the main branches had their usual origin, but, in their further distribution, they were arranged in an anterior and posterior plane. Those of the posterior plane were derived from the colica sinistra and supplied the splenic flexure and posterior compartment.

Those of the anterior plane were derived from the sigmoid branches and supplied the anterior compartment and all of the inner segment. The two planes were easily separable and in some places there were small bursae between them filled with an oily fluid. The general course of the arteries of the anterior plane was in an upward direction, although they arise lower down than those of the posterior.

The large intestine was practically free from foecal matter with the exception of a small clay-colored mass in the transverse colon. The mucosa of the transverse colon was smooth and regular and there were no cicatricial contractions along the line of adhesions. The wall of the posterior compartment of the outer segment was considerably thickened and the lumen was one and one-half centimetres in diameter. The mucosa was thrown into closely set folds in which there were no cicatrices. At the point where the intestine turns backward there was a moderate constriction and a prominent fold of mucosa projected into the lumen from the angle. In the posterior compartment the walls were thin, the lumen much larger and the mucosa smooth. The wall of the horizontal portion connecting the two segments was thickened and the mucosa thrown into numerous folds, but there were no cicatrices. The mucosa of the inner segment was normal.

Case II. History: The only fact obtainable was that the patient's bowels had always been very difficult to move.

Autopsy: In the abdomen there were found extensive adhesions in the left extremity of the transverse colon. The splenic flexure was not involved, and thus the course of the intestine could be more easily followed than in Case I. From beneath these adhesions there emerged two segments of intestine, an inner and an outer, having approximately the same position, course and structure as those previously described. The two compartments of the outer segment were not directly superimposed throughout, but only in their lower two-thirds. The upper portion of the anterior compartment passed to the right to become adherent to the transverse colon. The distal extremity of the outer segment was not closely bound to the posterior abdominal wall, but presented a somewhat bulbous enlargement resembling the caecum. The adhesions between the transverse colon and the outer segment seemed to be arranged in several layers, the more posterior being thicker and stronger than the anterior.

The transverse colon was distended with an amount of soft, fluid foecal material, while both compartments of the outer segment were filled with discrete scybalous masses varying from two to four centimetres in diameter. The mucous membrane of the transverse colon showed many small superficial scars along the line of the adhesions, while in the posterior compartment of the outer segment the walls were thin and the mucous membrane more smooth. However, over the entire surface were scattered small scars involving only the mucosa. There were two large haemorrhagic ulcerations on the anterior wall, each about two centimetres in diameter. The borders of these were irregular, their floor being formed by the muscularis and the inflammatory process having extended through the serosa so as to firmly unite the adjacent areas.

The walls of the anterior compartment were thick and there were a few atrophic areas in the mucosa, two of which corresponded to the large scars lying beneath. Opposite the adhesions on the transverse colon the walls were very thick. As it was necessary to remove the specimen from the body for further study, the relation of the blood vessels to the different segments was not determined.

Formation of the Anomalies: After a study of the structure and relation of these two specimens, there can be but little doubt as to the nature of their formation, and it is evident that the structures which, in the undisturbed position of the organs, appeared as diverticula, were merely displaced segments of a normal large intestine which had assumed new relations.

The sigmoid had been distended and pushed upward, a portion near its apex had become adherent to the transverse colon, the proximal limb had united with the descending colon and the distal with the posterior abdominal wall. Most of the points in favor of this view have already been brought forward. In the first place there were no demonstrable defects of development. The caecum and ascending colon were in their normal position, showing that the rotation of the intestine during foetal life has not been interfered with. We could, therefore, hardly expect any congenital deformities in the position of the sigmoid and descending colon.

Again, if a normal sigmoid whose blood vessels have been exposed, be drawn upward into the left hypochondrium and be so arranged as to occupy approximately the same position as the parts in specimen I, it will be found that the position of the vessels in the two cases is almost identical. Likewise the surface markings of the various segments did not differ in any respect from those of a normal colon.

The same factors which produce peritoneal fossae elsewhere are active here. The sigmoid having been fixed in its new position, its mesocolon became fused with the peritoneum of the posterior abdominal wall, and certain inequalities and irregularities in the apposed surfaces produced folds in the peritoneum. In this way, probably the projecting appendices epiploicae were the cause of the numerous fossae along the inner segment. The change of direction of the intestine likewise probably produced the same condition at the distal extremity of the outer segment. The small bursa-like spaces found between the two planes of arteries were probably produced from projecting pads of mesenteric fat.

Etiology: As to the cause of this displacement, there must have been in both cases some abdominal condition associated with considerable distention of the sigmoid and probably also of the transverse colon. This was accompanied by an inflammatory reaction at the point of adhesion. As the conditions had evidently existed for some time, and secondary changes had occurred, the determination of the factors is somewhat doubtful. There was no stricture or obstruction below the sigmoid which could account for its primary distention and consequent upward displacement. It was probably a case of "paralytic distention" following a peritonitis, for in addition to the local trouble in the left hypochondrium there was also an old process along the caecum and ascending colon. However, the possibility of the persistence of the enlarged sigmoid of infants must be borne in mind (1).

In Case I no scars were found in the mucosa of either the transverse colon or of the sigmoid. It is somewhat suggestive, however, that the attachment of the adhesions to the transverse colon corresponded exactly to the position of the appendices epiploicae.

These had evidently been inflamed and were probably the exciting cause. If the inflammatory process had involved all of the serous surface in this region, we would naturally expect a more general matting. As it is, there were other portions of intestine closely apposed and yet not adherent. Several cases of inflammation of the appendices epiploicae have been reported. Some involve the appendices alone, while others are caused by a herniation of the intestinal mucosa into the appendix. Retained foecal matter can easily set up an irritation in the pouch thus formed (1), (2), (3).

In Case II the attachment of the adhesions to the transverse colon occupied a much wider area, including the line of the appendices. Judging from their character, some thick and firm, others thin and almost transparent, the subject evidently had more than one attack of peritonitis. The numerous small ulcerations scattered along the mucosa of the large intestine were probably the cause of the inflammatory process in this case. One might expect to find more adhesions, but, as Treves (2), (4) remarks, "It is a conspicuous fact that in these cases no adhesions are usually found except between the two united segments of the colon."

Diverticula: While in neither of these cases can this arrangement of the intestine be looked upon as a diverticulum, yet they represent stages in the production of such and thus show some of the early determining factors. The formation of fistulous openings between adherent portions of the intestine and between other neighboring organs is quite common. The colon may communicate with the ileum, or with the bladder, or some portion of the intestine with the stomach. In the intestine the most frequent cause is idiopathic ulceration, but pressure atrophy may produce a similar result.

Although in Case I there was no indication of a beginning fistula, yet the walls of the anterior compartment were thin, and this condition would facilitate any atrophic or necrotic process. The tissue, however, between the two compartments was quite fatty in structure and, together with the bursa-like bodies present, would tend to distribute any increased pressure.

In the second case there were two large, recent, haemorrhagic ulcerations in the mucosa of the descending colon. They were evidently the result of a pressure necrosis, the exciting cause having been the scybalous masses in the colon. The floor of both these ulcers was in direct contact with a foecal mass, while their inflamed bases were firmly adherent to the tissue of the anterior compartment.

If the blood supply had been further interfered with or a more acute irritation had been set up, the tissue between the two lumina would sooner or later have broken down. The opening in the septum would have become enlarged, allowing the passage of foeces, and thus a real diverticulum would have been formed.

These scybali presuppose an obstacle to the passage of foecal matter in the large intestine, and this condition is partly accounted for by the bulbous enlargement at the distal extremity of the diverticulum. This enlargement was easily distended, and if it became filled with hardened foeces it acted as a valve, thus producing a retention in the descending colon.

Diverticula of the intestine are divided into two classes, the true and the false. True diverticula are those which possess all three coats, while the false consist only of the serosa and mucosa. These groups are further subdivided into the congenital and acquired. There are no reported cases of a congenital false diverticulum, all being acquired since birth. Fischer (5) and Mertens (6) both give a good bibliographv covering this ground.

The largest number of true diverticula are congenital, and of these Meckel's forms the greatest proportion. Grawitz (7) describes a diverticulum of the ascending colon found in a right inguinal hernia. There had been an atresia of the mucous membrane, and the pressure of the foecal material behind the obstruction had caused the intestine to form a loop. The apposed surfaces of the loop had united and finally a perforation was produced. Hansemann (8), Neumann (9) and Nauwerck (10) report cases in which the congenital anomaly has been due to traction of an accessory pancreas at the head of the diverticulum. In Futterer's case (11) there was an immense pouch occupying the position of the sigmoid. All layers were equally distended, and there was no demonstrable exciting cause such as stenosis. True acquired diverticula are more infrequent. Fiedler (12) reports such cases. Wallmann (13) describes nine true diverticula in a patient sixty-six years of age. They were distributed as follows:

Colon ascendens—1.
Colon transversun—3.
Colon descendens—3.
Sigmoid—2.

Norman Moore (14) reports a case of multiple diverticula of the small intestine with congenital stricture of the duodenum. It is into this latter group that the two anomalies described in the present paper would have been placed if the process had gone on to complete diverticular formations.

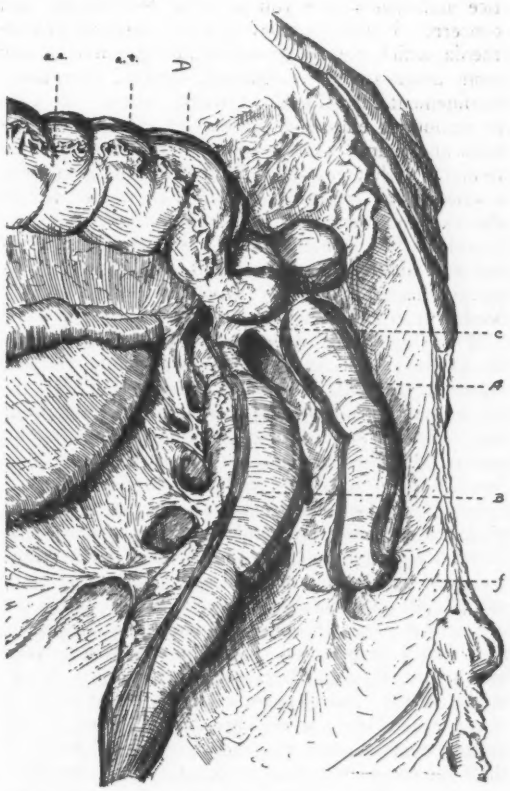

Figure showing Anomaly of Sigmoid Colon as found in Case I. A, Outer segment; B, Inner segment; C, Peritoneal adhesions; D, Transverse colon; a.e., Appendices epiploicae; a.t., Anterior taenia; f, Fossa produced by folds of peritoneum.

(1) Curschmann, H.—Die Anomalien der Lage, Form und Grosse des Dickdarms und ihre klinische Bedeuntung. (Deut. Archiv fur Klinische Medicin.) Bd 53, p 1.

(2) Treves:—Intestinal Obstruction, p. 49.

(3) Victor E. Martens:—Falsche Divertikel der Flexura sigmoidea und des Processus vermiformis. Mitt. Ausden Grenzgeb. der Med. Bd. 9, 1902, p. 743.

(4) Treves:—Intestinal Obstruction, p. 125.

(5) Fischer, Martin H.—False Diverticula of the Intestine. Journal of Experimental Medicine, Vol. V., 1901.

(6) Mertens (op. cit.)

(7) Grawitz (P.)—Ueber den Bildungs eines grossen Dickdarm divertikels. Archiv. f. Path. anat. LXVIII. 506-518.

(8) Hansemann—Virchow's Archiv., 1896, CXLIV., p. 400.
(9) Neumann (E.)—Arch. f. Heilk, 1870, XI., p. 200.
(10) Nauwerck—Ziegler's Beitrage, 1893, XII., p. 28.
(11) Futterer (G.)—Archiv. f. Path. Anat., 1886, CVI., p. 555.
(12) Fiedler—Denkschrift d. Gessells. f. Natur. u Heilk. in Dresden, 1868.
(13) Wallmann—Virchow's Archiv., 1858, XIV.
(14) Norman Moore—Trans. of Path. Soc. London, Vol. 35, 1884, p. 202.

THE TREATMENT OF CERTAIN PHASES OF NEURASTHENIA.*

By DONALD RAYMUND SMITH, M.D., San Francisco.

It is my intention in this paper to outline for you the treatment to be pursued, which will often give relief, if not entirely cure, certain forms of neurasthenia which you must all meet often in your practice and which give you more or less trouble and concern. I refer to cases of acute acquired neurasthenia, which follows or occurs during convelascence from acute fevers, exanthema, surgical operations, confinement, lactation, overwork, worry, excessive or prolonged emotional states, unfortunate love affairs and many other causes too numerous to mention. I wish to exclude chronic or hereditary neurasthenia, the treatment of which is complicated in the extreme, requiring special conditions and surroundings and, above all else, special nursing. Under the latter head also come the forms of neurasthenia that are distinctly hypochondrical or which border upon melancholia.

There are three symptoms that stand out most prominently in acute acquired neurasthenia, namely: anorexia, insomnia and loss of weight. There are other symptoms forming an irregular symptom complex, hard to describe, but summed up in the one word, "nervousness" by the patient, and it is for the relief of these symptoms that the patient seeks aid. These symptoms vary in the same individual at different times and in different individuals. They are many and varied, the chief being palpitation of the heart, precordial sensations, some form of indigestion (usually hyperacidity), parasthesias of various parts of the body, chilliness, flashes of heat (local or general), these patients blush easily and are easily startled, transitory neuralgias, headaches, various disturbances of sight (functional in character), ringing in the ears, loss of ambition and interest with a state of general malaise. Some of these symptoms may have an organic basis, therefore a cause should be looked for in each instance and corrected if possible. Generally, however, they are all simply due to the general run-down condition and will clear up without special medication.

Thus we are brought face to face with the question, what symptoms do require our special attention? The answer resolves itself to this; we are to treat the three prominent symptoms first mentioned: Loss of sleep, loss of weight and loss of appetite.

After a careful and thorough examination, the patient should be told the exact condition that exists; that they are phycisally run down, from whatever the cause in that particular case; that there is no organic disease present (if organic dsiease be found during the examination this statement should be guarded for the present at least); that their condition is perfectly curable and if they are willing to do as you say and follow out your line of treatment to the letter, you will do your best to perfect a cure of their case. Do not under any circumstances promise a cure, as you may meet with failure and lay yourself open to serious criticism. If confronted with the direct question, "Will you promise to cure me?" the best answer is that of S. Weir Mitchell, "I will do my best to cure you, only quacks promise to cure." Do not dismiss them lightly, but, convince them that their case has received the proper consideration from you and that each detail has been looked into and run to earth; for these patients are convinced that their case is one of importance, having rarely if ever occurred before, so demanding care and precision. On the other hand, do not enter into lengthy discussion of pathological changes, or prognosis within narrow limits, and do not advance theories in explanation of symptoms that the patient cannot understand or fully comprehend, as it becomes a fruitful field for speculation in a patient who is already, as a rule, too introspective; besides the patient's memory may be better than your own between visits. This is the preliminary or moral treatment that places both the patient and physician in the proper light, and puts the patient on a firm footing, from which recovery is most likely to occur. Next it is necessary to outline the treatment, in general, giving the reasons in plain language so the patient may know what to expect and consent to the same, thus forestalling future objections. All business, family and household matters should be put into shape before treatment is begun, in order to avoid a source of worry and to allow uninterrupted treatment.

The course of treatment then to be instituted is as follows: Put the patient to bed and do not allow them to get up for any purpose whatever. This must be insisted upon, for privileges in this respect will soon be abused, regardless of promises, and the entire object of treatment, absolute rest, will be defeated. The first few days under these circumstances will be irksome, and the patient should be warned in that respect and assured that they will soon become accustomed to the new conditions. It will be found that in a few days the patient will appreciate the benefit of the quiet and relaxation, either consciously or unconsciously, and become fully reconciled. This is best done away from home, either in a well-appointed hospital, hotel or private house, the object being to avoid contact with family or friends and assure absolute rest of mind as well as body. The mawkish sympathy of friends and the uncalled-for concern of the family will keep the patient in a constant emotional state and soon lead to self-sympathy, which is but a short step from hypochondriasis. If such is permitted you will soon have a chronic invalid on your visiting list of no use to themselves or society in general. However, if these conditions can be overcome, the treatment may

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be carried out successfully in the home with the aid of a good nurse or sensible member of the family. These patients should not be permitted to read books, newspapers or letters; neither should they be permitted to write letters, for all these things do not permit of the mental quiet required, and things small in themselves, as an unfortunate remark, the report of an accident, suicide, murder, or death of a friend, relative or acquaintance will often undo in an instant what you have accomplished by weeks of treatment.

In order to overcome the atrophy of the muscular system, which must occur from the prolonged rest, two methods may be employed, either one of which will answer the purpose, but best employed together. First, the application of the faradic current, with the aid of a slow interruptor allowing one or two interruptions per second to the various muscle groups, will be found all that is necessary. This will require about twenty or thirty minutes' application a day. It has no other effect than to mechanically stimulate the muscles and so replace exercise. If the patient be intelligent, this fact should be explained to them to remove any doubt in their mind as to the psychic influence sought. Aside from this it takes up part of the day, relieving the monotony, and is something to look forward to, being at the same time amusing. If, however, this be used in conjunction with intelligent massage much more benefit will be derived. Massage will accomplish the same purpose and will probably do much more. Did time permit I would like to go more fully into the subject. What has been said of the faradic current can also be said of massage. One should be given in the morning and the other in the afternoon. Massage is restful, if properly given, and is often followed by an hour or two of sleep, a condition much to be desired and encouraged. Improper massage is, however, distinctly harmful and should never be employed. The application of massage requires from forty to sixty minutes. So much for rest, physical and mental.

How are we to overcome the insomnia? It is needless to enter into detail upon the horror and suffering of this terrible symptom, or call to your mind how soon its effects are seen and felt upon the well, to say nothing of the physically depressed person. This symptom must be overcome and at once. For the first few nights it is usually necessary to resort to drugs to obtain this result. Many so-called hypnotics are on the market, which it is not my intention to discuss here. I will mention two, and give their application in this connection. Trional given in fifteen to twenty grain doses one hour before sleep is desired, and repeated in one hour if necessary, will I think, give the best satisfaction. Sulfonal in the same or smaller doses, three or four hours before bedtime comes next. A combination of the two will often act better than one alone. In the case of sulfonal the second night will often be better than the first. Chloral is dangerous and opium and its alkaloids should never be used under any circumstances in this condition. If possible avoid all drugs, or drop them as soon as possible and resort to hydrotherapy. Time will not permit me to go fully into this subject except to say that the full, prolonged, warm bath given one hour before you desire the patient to sleep will often answer the purpose. Better still is the wet pack continued as long as necessary, which may mean all night, care being taken not to expose any part of the body, except the face and head, to the air and to avoid evaporation by a sufficient thickness of blanket. Best of all is the drip sheet if properly given. Extreme care here should be exercised to produce a proper amount of reaction and avoid chill. One of these measures will invariably prove sufficient if properly given. I wish I could go more thoroughly into the subject of hydrotherapy with you. All measures for the relief of the insomnia may soon be discontinued, as it is usually the first symptom to show improvement. It is best, however, to continue treatment for a while to insure against a return, as a recurrence is always discouraging to the patient.

The Diet. This should be wholesome and abundant, at the same time simple and easily digested. It should consist mainly of milk and eggs as a base. The milk should be rich and fresh, and if thought advisable a little cream may be added. The eggs may be prepared in any manner except fried or hard boiled, but raw is best, either alone or beaten up in the milk. To this base any plain, easily digested food may be added. Butter, stale bread or toast, beef, chicken or any fowl, together with well-cooked vegetables, cereals and light deserts are indicated. Stimulants, as tea, coffee or alcohol are to be avoided, as are pastries and cakes. Chocolate and cocoa are permitted. Should the patient have any idiosyncrasys toward any particular form of food these must be respected in the early treatment and overcome later if thought best. Should the anorexia be marked at first the patient should be told to eat just as they would take medicine, not because they like it, but because they need it. The necessity of food should be impressed upon them. In the case of marked anorexia the diet should consist at first wholly of milk and eggs, as the greatest amount of nourishment can thus be concentrated. The desire for food will soon return, either by itself or by the aid of some bitter tonic. It is desirable to bring the diet up to the maximum amount the patient can tolerate without showing signs of digestive disturbance. There is usually some degree of constipation to overcome. This is best done by some mild, simple laxative, the nature of which is not known to the patient, thus overcoming groundless objections often entertained to some drugs. The ideal preparation in most cases is the pill aloin, belladonna and strychnin, with or without cascara; with this small doses of sodium phosphate or mild mineral water may be added. Here also massage will be found beneficial. If the constipation be kept well in hand and the hygiene of the mouth be looked after, large quantities of food may be ingested without causing any digestive disturbance whatever.

Medication. Aside from that already mentioned but little is needed. These patients demand medi-

cine as a rule, and will not be satisfied unless they are taking some. They can be humored in this by giving some good tonic, as elixir iron, quinin and strychnin, or any other preparation of known constituents. There will usually be found some degree of anemia among this class of patients and some form of iron or iron and arsenic, if you prefer, will be indicated. Blaud's pill, plain or arsenated, is usually ideal. Beyond this no medication will be needed, except what may be called forth by special conditions. Generally the less medicine the better, and if possible, overcome the symptoms by other means. These are the patients who, if they become chronic, prove such good customers of the patent medicine fraud. Under no circumstance should the patient know what medicine they are taking, as many of them have taken remedies without result and are necessarily prejudiced against them. If they ask, simply reply it is best for them not to know. When certain medicines are complained of as causing unpleasant symptoms, the change of vehicle or color will often give instant relief, if there is no actual basis for the complaint.

The physician should see these patients once a day only. More than once a day alarms the patient, and unless one visit is made they feel that they are neglected. They demand attention, and unless they are satisfied in this respect they soon lose confidence, and with the loss of confidence goes the possibility of a cure. During the first part of the visit let the patient talk, tell how they feel and ask any questions they may wish. Make a careful examination of the pulse, tongue, eyes, etc.; inquire as to sleep, appetite and general condition, then devote the remainder of the half hour to conversation of a general nature, thus implying without hurt, that there are other topics outside of medicine and symptoms. If you know a good story, tell it, if you can bring it in, especially if it illustrates a point you wish to impress. For obvious reasons don't tell the same story twice to the same patient. Never criticise the nurse or attendant to the patient, even if they are flagrantly in the wrong, as their services immediately become worthless and even harmful. Insist upon the room being kept neat and clean and compliment such a condition when you can. Have all the air and sun in the room possible. Question and leave instructions with the nurse in private to avoid any suspicion of incompetency in the mind of the patient. Be firm and at the same time reasonable. It is always best to have the consent of someone in authority to back up your treatment. The large majority of these patients are females, and it is with females that the largest amount of success will be met. Males do not respond well to treatment as a rule, they being too restless and unwilling to drop their business or occupation. A neurasthenic male as a rule must find his own cure.

How long are we to continue this treatment? The best guide to this is the weight. As a rule when the patient has returned to their normal weight a cure has been effected. There are cases, however, who, having gained sufficient weight, will still retain some of their former symptoms. They usually disappear in time if the treatment be continued along the same lines. Again, there are others who feel perfectly well long before they have reached the proper weight. In such cases it is a good rule to follow not to let them up till the proper weight has been reached, for fear of a relapse. For the same reason it is best to keep the patient in bed for a week or two after the weight index has been reached. Generally speaking, six to ten weeks will be a sufficient length of time to perfect a cure. A much longer time will be found necessary in some cases.

The patient should be gotten up gradually. Ten minutes twice a day, increased ten minutes twice a day till four or five hours a day have been reached. After they are up it is best to send them away from home for a month or so, giving them a change of surroundings and climate. They should be instructed as to the prophylaxis of possible future attacks.

The treatment I have briefly outlined is the rest treatment of Dr. S. Weir Mitchell and the one so successfully employed by him and other physicians in Philadelphia. My only excuse for reviewing it is that I do not find it being employed on the Coast as it should be, and therefore does not receive the credit it deserves. Several cases of so-called "rest treatment" or "rest cure" have come to my notice which were a disappointment to the physician and the patient. Upon inquiry, I found that the things that should not have been done were done. In one instance the patient was allowed visitors daily, some days amounting to almost a reception. In another, there was some difficulty in obtaining the diet prescribed at the hour ordered, and the patient was kept fully informed of the fact, on every occasion, by her nurse till she felt that she was the cause of a great deal of trouble. In both of these cases the word rest became a farce. If the treatment be properly followed out, mother and daughter may occupy adjoining rooms in a hospital and neither one know of the other's presence in the same institution. I know that if the treatment be properly conducted it will give the most gratifying results in cases that at times seem hopeless. Rather never undertake this treatment, however, unless it can be done under the proper conditions, for failure will invariably result therefrom. Here I wish to make a suggestion, namely, that we take advantage of this climate and combine the rest and open air treatments for this form of neurasthenia. I believe that if this were done, our results would be even more gratifying and we would be able to report more permanent cures than is possible at present.

INFANTILE PARALYSIS.

The Role of Physician and Specialist in its Treatment.

By JAMES T. WATKINS, M. D., San Francisco.

Mr. President and Gentlemen: Three years ago I had the honor of directing the attention of the Medical Society of the State of California to a rational and efficient method of treating by operation the disabilities consequent upon infantile paralysis—

called from its originator, the periosteal implantation method of Lange.

After considering the older method of tendon-to-tendon grafting, I said: "It is probable that a very much smaller percentage of good results would be recorded were those cases discarded whose casual lesion was other than that of infantile paralysis, and it would be still further reduced were more time allowed to elapse between the operation and the report of the case. It has been the privilege of the writer to discuss and compare the results of the leading orthopedic specialists in this country and in Europe, and making allowances for individual optimisms, there has seemed to be a fairly universal dissatisfaction with results obtained by the older methods."

By a gratifying coincidence, Dr. Royal Whitman, of New York, one month later, in an address before the American Orthopedic Association, said: "I am inclined to think, therefore, that those who have had considerable experience with the operation, and the opportunity to analyze later the results, will admit that tendon transplantation, in its original form at least, is on the whole, a disappointment."

A year later, Drs. Dane and Townsend, of Boston, presented, before the same association, the results, in tabular form, of an effort to trace and examine 50 consecutive cases of infantile paralysis which had been subjected to operation by different members of the staff of the Boston Children's Hospital. Of these 36 cases had been located. In 7 instances arthrodeses had been performed, with or without tendon graftings, and in 3 instances the astragalus had been removed. The results justified the operations; for a more or less serviceable foot resulted in each instance, whereas the 18 direct tendon-to-tendon grafts that had been performed had resulted in 18 complete failures.

Dr. Whitman considers that the "most frequent cause of failure is the mechanical disadvantage at which the transferred muscle must do its work." While directing attention to this cause, among others, I was constrained by the findings at several secondary operations to assert that the principal cause of failure in tendon-to-tendon grafts, lay in the subsequent stretching of the over-burdened tendon of the paralyzed muscle. An opinion which is certainly in keeping with the pathology of the disease.

Both these causes of failure are avoided by employing the method of Lange. Indeed, a further experience with this periosteal implantation of healthy tendons or of their silk prolongations, has served only to emphasize the excellence of the procedure and to bring us nearer to a precise determination of the principles which should govern its performance.

It is a common experience that, when the corrections of deformities and re-adjustments of muscular power, incident to the orthopedic problem presented by a case of infantile paralysis, have been made, and the limb has been used functionally, muscles that had apparently been paralyzed have been observed to re-acquire tone and function. Since this muscle regeneration is known to occur after operation in cases which presented deformities long, long subsequent to the initial attack—that is, in cases which had been neglected or which had had ineffectual treatment—it is pertinent to ask, might not the spread of the paralysis be appreciably limited, and the detail of the final operation simplified, were the latter preceded by an enlightened, thorough, and sufficiently protracted medical treatment?

The detail of such treatment is to be found only in scraps in text-books, despite the fact that it comes properly within the activities of the general practitioner. I shall not apologize therefore for spending five of my fifteen minutes in considering it at length.

It is doubtful whether treatment will check the inflammatory process in the cord. Cupping over the spine has been suggested and would seem a rational procedure. Medication at this stage consists in a brisk purgative, a sedative in the form of the bromide of potash, and full doses of ergot, 10 drops of the fluid extract every four hours for a child of one year.

A month or six weeks later—after the subsidence of the initial invasion—begin with your exercises. Almost no limb is completely paralyzed. Encourage the children to employ whatever strength they have in performing resistance exercises which you or the mother can devise with a cord, a pulley, and a bag of sand.

Be sure that at least twice a day each joint is passively exercised for a number of times, carrying it always to each limit of normal motion. If the child is old enough to comprehend you, direct it to move the foot in such a way as will necessitate contraction of the paralyzed muscles, and while it is exerting the appropriate cerebral impulse, yourself carry the member into the desired position to the limit of normal motion. This manœuvre should be repeated many times.

It is of the utmost importance that, both by day and by night, the limb should be maintained, at first in the middle of the arc of its activity, and later in slight overcorrection, the attitude in which the paralyzed muscles are relaxed. Wedging the sole of the shoe, with or without a bar up the side of the leg by day, and at night a simple sheath splint or a so-called night shoe, will usually prove sufficient to prevent contractures. This is absolutely necessary if the inherent contractility of the unopposed muscles, the weight of the limb and especially the weight of the bedclothes is to be successfully counteracted.

Galvanization properly applied and continued for a long time is the next most valuable aid. Since at a very early moment the muscles present the reaction of degeneration—that is, anode closure contraction is equal to or greater than cathode closure contraction—the cathode should be placed on the spine at the level of the lesion and the anode upon the affected muscles. The former should be a large, flat electrode. If the legs are affected, place this electrode over the last dorsal vertebra. If the arms are involved, place it over the cervical spine.

It is important to relax the affected muscles to the utmost by holding the limb in the overcorrected position during the two or three minutes, by the

clock, that the anode is being carried back and forth over the affected area. In order to accustom the child to it, begin with only the electrodes, and gradually increase the current a little each day. To be efficient, it is necessary to use comparatively strong currents and the treatment is painful. Therefore it cannot be given over to a parent or nurse. It is the physician's work. Finally a number of make and break interruptions are introduced to cause contractions in the affected muscles. Later when the response to faradism has returned, the galvanic electrodes should be reversed and the galvanic and faradic currents employed upon alternate days.

A vigorous massage should follow your electrical treatment. In my opinion, it is not necessary that one should be an expert masseur for these cases. It has only to be borne in mind that the object of treatment is to help empty the limb of its blood and tissue juices. The arterial system is well able to take care of itself; the massage augments the venous and lymph systems. Therefore, the soft parts should be well kneaded and vigorously stroked centripetally till the limb is red and warm. Do this gently at first, and then as the child gets accustomed to it, with increasing force. Teach the mother or attendant to do this massage, for it should be given twice daily.

Frequent baths, at a temperature of 98 degrees F. for 10 to 15 minutes, followed by rubbing with spirits of camphor or brandy, are said to be of value. And finally, at night, the limb may be wrapped, for an hour, in dry hot cloths, or the hot air oven may be used.

Only two drugs have appeared to be of any value during this stage: Arsenic (arsenious acid in doses of 1-40 gr.); and strychnia pushed to the limit of tolerance. It is best given with frequent intermissions—say missing every fifth day.

The conservative treatment may then be summarized as follows: Treatment during the acute stage, of doubtful benefit, consists in local counter-irritation, in antipyretic measures and drugs, and in full doses of ergot.

Treatment during subsequent stages, begun one month or six weeks after invasion, consists in exercise—active and passive,

In maintaining affected muscles in a state of relaxation,

In galvanization with reversed electrodes, and, later,

In alternate galvanization and faradization,

In massage twice daily,

In tepid baths and

In dry heat.

Persevered in for a year, this form of treatment, which was that advocated at the Sanitarium of Prof. Hoffa, at Wurzburg, when I was with him, may be expected to confine the consequences of the disease within the narrowest limits. Whatever paralysis remains, however, will be permanent. Protraction of conservative treatment will be time lost.

I shall, during my remaining five minutes, discuss the orthopedic problems presented by paralysis of the muscles of the leg; however, the principles which govern their treatment apply equally well elsewhere.

We recognize four essential motions of the foot on the leg—movements necessary to normal progression over uneven surfaces. They are in the order of importance, plantar flexion and dorsal flexion, which take place at the ankle-joint, and supination and pronation, which take place two-thirds in the subastragaloid and one-third in the midtarsal. These motions are performed through the agency of nine long muscles, several of which participate in each motion, and each of which participates in two or more motions. For example, the long extensor of the great toe is also a dorsal flexor and a supinator. While planning an operation not only the major and minor functions of the several muscles must be considered, but their anatomical locations and relative strengths as well. It is manifestly impossible to obtain a perfect foot by a readjustment of a remnant of the muscular power originally present. Something must remain deficient in the readjusted foot; and the deficiency will be proportional to the extent of the paralysis.

After overcorrecting whatever deformity may be present, our aim is to establish these four essential motions—first plantar flexion, then dorsal flexion, and finally the side-to-side motions, so that they can be made independently of one another. To do this we try to replace (not graft) the paralyzed muscles by muscles which are anatomically and functionally nearest to them, attaching each muscle or its silk prolongation directly to the periosteum of the foot at the point where it will obtain the best leverage for the performance of its new function. For antagonistic functions, muscles should be employed which have always been capable of contracting independently of one another. Occasionally all the muscles which participate in a certain motion are destroyed, as for instance, in paralysis of the muscles on the anterior aspect of the thigh. There remain at our disposal only a group of pure antagonists—in this case, the muscles which arise from the ischial tuberosity—with which to replace them.

There can be no question that a transplanted muscle can and will, in response to cerebral impulse, acquire a function antagonistic to its original function, and that the acquired function may in time become automatic; but, unless it was capable of independent action, in the group to which it originally belonged, it will, in its new location, contract only in response to those cerebral impulses which still set up contractions in the muscles of the original group.

The hamstrings, which have always contracted collectively, will continue to do so, no matter how you may modify their insertions.

Therefore in replacing the lost extensor power by transplanted hamstrings, it behooves us to employ all of this group, since to leave one behind would mean only that its pull must be overcome before extension at the knee could be accomplished—a needless dissipation of force.

Further, experience has shown that, except in an unexplained action of the outer half of the tibialis anticus, split-off portions of the leg muscles do not acquire independent functions. Therefore it is incumbent upon us to transplant entire muscles and not parts of them.

Still further, whatever motion obtains at a joint should be under voluntary control. Joint play which cannot be governed is certain to result in the production of a deformity. Where such a loose joint presents, it is best to perform an arthrodesis—to peel off the opposing articular cartilages—and to get an anchylosis of the joint in the most desirable position. The result, as in the seven cases referred to by Dane, will be a useful foot.

Since, when a deformed foot has been held in overcorrection long enough for the stretched muscles to contract, some of them do sometimes reacquire their function, it would seem right, as has been pointed out by Hoffa, to hasten their regeneration by shortening their tendons. This procedure has a two-fold advantage. It hastens the regeneration of whatever muscles will regenerate, and removes or diminishes the tension put upon the freshly implanted muscles.

In closing, permit me to use a word of warning. Your patient's parents may have an idea that, on the removal, six weeks after the operation, of the plaster-of-paris dressings, no further protection will be needed, it will only remain for him to take up his bed and walk. If so, disabuse their minds of the delusion. Only gradually may a return to the unrestricted use of the foot be permitted; first, in a retentive splint, then in a shoe with either a wedged sole or an insole and uprights. And only little by little—an hour at a time—may he be weaned from them.

The principles of the operative treatment then may be summarized in this way:

1. Overcorrect deformity and maintain the overcorrection for a long time.
2. Replace paralyzed muscles, when possible, by muscles which are functionally and anatomically related to them.
3. For each of the four essential motions supply muscular substance which is capable of independent contraction.
4. Get rid by arthrodesis of whatever joint motion you cannot control.
5. Hasten regeneration or at least restoration of function in overstretched muscles and diminish the tension on the transplanted ones, by shortening the tendons of the former.
6. Protect the limb which has been operated upon, with appropriate apparatus, and only gradually permit its unassisted use.

Much of the excellence of your result will depend upon the thoroughness with which the muscles are trained in the exercise of their new functions. This again is a matter demanding the attention of the mother and of the family physician.

In no branch of medicine may the adage, "make haste slowly," be applied more often than to this grim specialty of orthopedics.

CALIFORNIA PURE FOOD COMMISSION NOTES.

By GEORGE H. KRESS, M. D., Los Angeles, Cal.

The recent Del Monte meeting of the Medical Society of the State of California provided for the organization of a State Pure Food Commission to be made up as follows:

I. *A Central Committee* to consist of five members to be appointed by the President of the State Medical Society. (Dr. George H. Evans, the President of the State Society, has appointed this Central Committee as follows: Dr. Fitch C. Mattison of Pasadena, Dr. Langley Porter of San Francisco, Dr. William Snow of Stanford, Dr. Stanley P. Black of Pasadena, and Dr. George H. Kress of Los Angeles.)

II. *An Advisory Committee* to consist of the chairman of the different Pure Food Committees of the County Medical Associations throughout the State of California. (These Pure Food Committees of the County Medical Associations are to be appointed by the presidents of such County Medical Associations, the general plan being that each main branch shall be represented by a committee of three, and that branches in outlying towns and cities are also to have their own representative committees of three. The chairmen of the committees of the outlying towns or cities are also to be members of the County Pure Food Committee of the whole.)

III. *An Associate Membership Committee* consisting of health officers or prominent medical or laymen, who are known to be especially interested in public health work. Such associate members will be appointed by the chairmen of the County Pure Food Committees or when deemed advisable by the chairman of the State Pure Food Commission. (The thought here is to bring to the aid of the commission and local committees all influence possible that would help to bring into being the things for which the commission is supposed to stand.)

It may be of interest to note that the plan of such a State Pure Food Commission arose in the work of a Pure Food Committee of the Pasadena Branch of the Los Angeles County Medical Association. This Pasadena Pure Food Committee sought to obtain for the city of Pasadena, pure milk and pure foods, and as the work progressed, it was seen that to obtain results, it would be necessary to have the co-operation of the Los Angeles authorities, and to that end the Los Angeles County Medical Association provided for the formation of such a Pure Food Committee. Its general make up is as follows:

From the Los Angeles City Branch were appointed the chairman of the entire committee, (Dr. L. M. Powers, the health officer of Los Angeles) and two other members, Dr. Titian Coffey and Dr. George H. Kress.

The Pasadena Branch appointed as its committee Dr. Stanley P. Black, chairman, and Dr. F. C. Mattison, J. H. McBride and E. B. Hoag.

The Pomona Branch appointed Dr. C. G. Toland, J. K. Swindt, and F. Garcelon.

The Long Beach Branch appointed Drs. A. C. Oelbry, E. M. Freeman and J. M. Holden.

From this it is seen that the Los Angeles City Branch has its own particular committee, and each of the adjoining city and town branches has its own committee. The Pure Food Committee of the Los Angeles County Medical Association consists of three Los Angeles city members and the chairmen of the three branch (Pasadena, Pomona, Long Beach) committees.

This is the form of organization that is commended to the County Medical Associations throughout the State as one which will probably give as good results as any. In addition to members appointed as above outlined, associate members, (medical or laymen or women who are interested in public health work) can be appointed. The point to be remembered is this, that in order to obtain results in public health work it is necessary to bring to the aid of such committees the support of the public, and that means that the public must first be educated to see public health needs from the same standpoints as the Pure Food Committees. To bring about this education, it is necessary to secure the co-operation of prominent laymen and club men and women, so that the organizations with which they may be affiliated will give their co-operation and stand behind the Pure Food Commission and committees in their work.

* * *

The Pure Food Commission organized on the evening of May 21, 1907, in the offices of Dr. Kress in Los Angeles, the following members being present: Dr. Mattison of Pasadena, Dr. Snow of Stanford, Dr. Black of Pasadena and Dr. Kress of Los Angeles.

Dr. Mattison stated that the first order of business would be the election of a secretary. Dr. Kress was elected to that office. The evening was spent in a general discussion as to the aims of the commission and the best method of organization. The plan noted in a preceding paragraph was agreed upon as one which would probably lead to the best results. The chairman of the commission stated that the secretary of the State Medical Society had expressed a desire to have a column devoted to the work of the commission set aside in the STATE JOURNAL. The secretary of the commission was requested to maintain such a column.

* * *

An appeal is herewith made to the County Medical Associations in California that they take up at once the organization of County Pure Food Committees along the lines above noted. It will not be necessary for the county associations to pass on these matters, the presidents of the county societies, by virtue of the action of the State Society having the power to appoint such local Pure Food Committees without any further motion or action by the county societies. There is, of course, no objection to placing the matter before the county societies as a whole or before the councils. If, however, it is not convenient for the society as a whole or the council to pass upon this matter at this time, the county presidents are requested to act without further notice, so that the central committee of the State Pure Food Commission may be able to get in touch at once with the men who are to carry on this work in the different counties of the State. The County Pure Food Committees should be appointed in June or July at the latest, if the work is to be in full swing by September or October.

* * *

In this issue of the STATE JOURNAL will appear a paper written by the secretary of this commission dealing with the pure milk question of Los Angeles and the attention of the County Pure Food Committees is requested to this article as it explains along what lines the Los Angeles Pure Food Committee worked in order to obtain a supply of pure milk for that city. The Pure Milk question is usually a pertinent one for all cities in the summer months and the Los Angeles method may be of interest elsewhere on this account.

The office of the State Pure Food Commission, to which all correspondence should be sent, will be that of Dr. Fitch Mattison in the Stowell Building, Pasadena, California. Correspondence addressed to any member of the commission, when sent to this address will reach the members for whom intended without delay.

The Central Committee of the State Pure Food Commission hopes the County Pure Food Committees will feel free to call upon it for information or aid at any and all times. The central committee intends to gather all the literature possible bearing on different phases of public health work, and from the ordinances and laws of other cities and States, to work out types of laws and regulations adapted to different California environments.

* * *

Dr. Snow, who is a member of the central committee and who has charge of the department of public health of Stanford University, will spend the next several months in the large cities of the East making a special study of public health activities, and it is his intention to send to the commission full reports of his investigations and data and ordinances relating to the work of the commission.

COUNTY SOCIETIES.

BUTTE COUNTY.

The monthly meeting of Butte County Medical Society was held in the parlors of the Hotel Colonia Saturday evening, May 11th, President B. Caldwell presiding.

The following members were present: Drs. B. Caldwell and O. C. Hawkins of Biggs, L. Q. and L. L. Thompson of Gridley, C. L. Browning, W. E. Dozier, N. T. Enloe and Ella F. Gatchell of Chico.

Drs. Dozier and Hawkins were admitted as members of the Society.

Dr. Osborne of Hamilton City applied for membership and was referred to the Board of Census.

A paper was read by Dr. N. T. Enloe on "The Use of Escharotics in the Treatment of Cutaneous Cancer." The discussion was opened by Dr. C. L. Browning and participated in by other members of

the Society. It was decided to hold the next meeting in Chico, June 8th.

After adjournment the members were treated by Dr. Caldwell to a fine collation which was much enjoyed. ELLA F. GATCHELL, Secretary.

SANTA BARBARA COUNTY.

On May 6th a special meeting of the County Society was held at the Chamber of Commerce to give the profession and others interested an opportunity of meeting Mr. Samuel Hopkins Adams. A number of prominent citizens, members of the medical profession, district judge and others, attended the meeting, and the subject of medical frauds was discussed at considerable length and with great profit to all present.

We find these joint meetings of laymen with the members of our Society very instructive and very valuable. WM. T. BARRY, Secretary.

SAN JOAQUIN COUNTY.

At the regular monthly meeting of the San Joaquin County Medical Society, held March 29, 1907, the society was entertained by Drs. Fitzgerald and Southworth. The following members were present: Drs. H. E. Southworth, W. W. Fitzgerald, I. B. Ladd, H. C. Petersen, H. Smythe, E. L. Blackmun, F. P. Clark, A. W. Hoisholt, M. C. Taylor, H. E. Sanderson, M. Smyth, J. D. Young, M. Goodman, R. R. Hammond, R. B. Knight, J. D. Dameron, C. R. Harry, A. W. Morton and B. J. Powell. Drs. Welti, Mason and Walker as guests.

Dr. A. W. Morton of San Francisco addressed the soicety on "Appendicitis and Its Complications." After his address the society adjourned to the dining-room of the Imperial Hotel and during the banquet the subject of Dr. Morton's address was discussed. Dr. A. W. Hoisholt opened the discussion and was followed by most of the members present.

BARTON J. POWELL, Secretary.

SHASTA COUNTY.

The following is the report of the meeting of the Shasta County Medical Society, held April 20, 1907:

Shasta County Medical Society met in regular session April 20, 1907, at the City Hall, President R. F. Wallace in the chair. There were present Drs. Wallace, Bauter, White, Edgecomb, Taylor, Nutting, Tebbe, Saylor and Weber. The minutes of the previous meeting were read and adopted.

The Secretary was instructed to have the following resolutions printed and a copy of the same sent to each member of the Society:

"Resolved, By Shasta County Medical Society, that the minimum fee for examinations for 'old line' life insurance companies be five dollars and for fraternal insurance companies and societies two dollars; and be it further

"Resolved, That any special arrangement for increase of fee to five dollars per examination made between medical examiner and any agent of $3.00 companies be not accepted by this society.

"Whereas, it is the sense of this body that contract lodge and society practice is detrimental, degrading and humiliating to the medical profession, therefore be it

"Resolved, By Shasta County Medical Society, in regular meeting assembled that no member of this society be permitted to enter into contract relations with such societies, and be it further

"Resolved, That no physician in the employment of such societies be eligible to membership in Shasta County Medical Society, and be it further

"Resolved, That no member of Shasta County Medical Society be permitted to consult with any physician following such a practice."

Dr. S. T. White read a very interesting paper on Pneumonia, which was followed by a lively discussion by all doctors present, after which the society adjourned to meet with Dr. Legge at McCloud, July 20, 1907.

PHIL H. WEBER, Secretary

PUBLICATIONS.

Operative Otology, Surgical Pathology and Treatment of Diseases of the Ear. By Clarence John Blake, M. D., Professor of Otology in Harvard University, and Henry Ottridge Reik, M. D., Associate in Ophthalmology and Otology Johns Hopkins University. New York and London: D. Appleton & Company. 1906.

This is essentially a surgical treatise in which the individual experience of the writers is particularly emphasized. The pathology of the various conditions also receives careful consideration. An effort has been made to present the subject as simply as possible. The opening chapter is devoted to the surgical anatomy of the temporal bone and adnexia, and the succeeding one to aseptic technique. Neither of these chapters presents anything new. The portions in which diseases of the auricle, external auditory canal, tympanic membrane, and tympanum, are considered contain clear, brief and yet complete, descriptions of the principal points, especially pathological. The other sections on the technique employed in operations in middle ear and mastoid diseases are quite noteworthy for their lucidity. The book terminates with an appendix, which contains notes on various subjects, such as The Value of Early Paracentesis of the Tympanic Membrane in Acute Suppurative Otitis Media; The Algesimeter; The Localizing Symptoms of Brain Abscess, an article especially prepared by Dr. George Arthur Waterman, of Boston; Keiper's chart o fthe clinical symptoms of disease in the mastoid process and adjacent structures; the removal of the stapes for the relief of aural vertigo; and the surgical exploration of the labyrinth after the method of Julian Bourguet.

A. J. L.

A Text-Book Upon the Pathogenic Bacteria for Students of Medicine and Physicians. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia Hospital and to the Medico-Chirurgical Hospital, Philadelphia; Fellow of the College of Physicians of Philadelphia, etc. Fifth Edition. Thoroughly Revised. Philadelphia and London: W. B. Saunders Company. 1906.

This is a new edition of a well known book and does not require any extended review. The general arrangement of previous editions is the same, and the results of recent investigations have been carefully considered in the revision of the text. The chapters upon infection and immunity have been entirely rewritten; although the subject of Opsonins is barely mentioned. We were unable to find any reference to the clinical uses of opsonic examinations. Altogether the volume is a very accurate and interesting presentation of bacteriology from the modern point of view. A. J. L.

Second Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. 1906.

The second year's work of the Institute, like the first, has been carried on in temporary quarters under difficulties, but the organization has been perfected and the work has theretofore been more exact. During the last year 1,561 patients were treated, of which number 885 were new cases. The first portion of the report is largely concerned with sociological data and statistics based on autopsy findings. There is also an excellent article by Dr. Joseph Walsh on "The Kidneys in Tuberculosis." It is based on the pathological study of 59 cases of advanced pulmonary tuberculosis which came to autopsy at the Institute. The author concludes that many forms of nephritis are common, but the parenchymatous is the most frequent. This agrees with the observations of Coffin, Landouzy and Bernard, and others. With reference to the incidence of tubercles, the author states that he found them in 58% of his cases. This corresponds very closely with the figures of Heydn, who found them in 57%. Tubercle bacilli in the urine were frequently observed. In a series of 17 cases tubercle bacilli were demonstrated by animal inoculation in 82½% of the specimens. This is even a higher percentage than Flick and Walsh obtained several years ago (73 1-3%). From the clinical study of the renal condition in pulmonary tuberculosis the following conclusions are reached: Oedema is not the rule, although it is frequent; albumen is uncommon; casts and pus cells are found in 13.40% of the cases; the common clinical symptoms of nephritis are hyaline and granualr casts and tubercle bacilli in the urine; less frequent symptoms are pain or ache in the lumbar regions, albumen in the urine, oedema, looseness of the bowels, which may or may not alternate with constipation; and still less frequent symptoms are unusual fatigue upon slight exertion, unaccountable dyspnoea and rapid pulse.

Another equally interesting paper has been written by Dr. Josephus T. Ullom on "The Liver in Tuberculosis." It is based on the pathological study of 37 cases. He found tubercles in about 81% of the specimens examined, which agrees with the results of previous investigations by Simmonds, but is considerably in excess of the results of Zehden and Rolleston, who were unable to demonstrate tubercles in more than 50% of their cases. So far as the manner in which the liver is infected is concerned, the author, taking the view of Sabourraud, Kotlar and Zehden, believes that the infection takes place through the blood, the tubercle bacilli being carried to the liver by the portal vein and the hepatic artery. Another noteworthy paper from the pen of Leonard Pearson is a review of recent investigations and observations upon the immunization of animals against tuberculosis. A. J. L.

DEATH OF MRS. W. B. HARRINGTON.

It is not often that a medical publication, printed practically only for medical readers, feels called upon to chronicle the death of a layman, still less a lay woman. But it seems to me that it is right for us to do this in the case of the death of Mrs. W. B. Harrington, for all of that part of her life which might be called her public life, was closely associated with the medical profession in its public hospital work.

For thirty years Mrs. Harrington was President of the Board of Managers of the Children's Hospital, in San Francisco, and during that time the hospital grew from being a small institution in a small apartment to its present proportions. With all of that growth Mrs. Harrington was identified and much of it was due to her initiative, and owed its completion to her ceaseless efforts. This means the more if we remember that this board of women knew nothing of managing hospitals when they began their work, and had not a clear concept of what an ideal hospital should be. It is true that they had the association of Dr. Charlotte Blake Brown in the work, and she could help at many important points with technical knowledge. Still the majority of the Board were lay women and they had to learn what they were working for and how to do the work, in the doing of it. To this Mrs. Harrington brought the ability to comprehend a project in its entirety and also in detail, and this, coupled with marked executive ability, were of material aid in her task. In addition she soon won, and always kept, the confidence of those to whom she had to look for financial support, for she always kept her promises, and she rarely failed to find sufficient funds for any development project she had in connection with the hospital.

The medical profession is interested chiefly, however, in the fact that this band of women, with Mrs. Harrington as their President and leader, founded and supported a hospital on high medical ideals, and they had the true conception of the relation which should exist between the Board of Managers and the attending staff of a hospital. Moreover, Mrs. Harrington always wished that the hospital work should not cease at the point of healing the sick. She knew that the hospital was the natural field for working out improvements in methods or the evolving of new methods, and she wished that these should be taught whenever that could be done without transgressing the personal rights of the patients.

This is shown most plainly in the hospital's avowed intention to particularly supply a place where women physicians and surgeons could receive hospital training after the completion of medical studies, and even to-day the hospital accepts, as internes, only women practitioners.

The medical profession in California, both the men and the women of it, is indebted to Mrs. Harrington and to her associates for this institution, which has been managed with singleness of purpose to meet the highest requirements of the patients, of the medical profession and of the people of California.

Apart from this, which was the *Magnum Opus* of her very energetic life, Mrs. Harrington was elected President of the San Francisco Red Cross Society in 1898 when the organization undertook relief work here and in the Philippines. She resigned this office to become President of the California Red Cross Society when it was organized and she remained in this office until 1905, when Congress took over the relief work. In both of these high public offices she showed the same breadth of view, unflagging peal and humanitarianism that were well known in her hospital work.

Her death occurred in the Children's Hospital on the 13th of May, 1907.

UNIVERSITY OF CALIFORNIA HOSPITAL.

The University of California has established and opened a hospital in the building of the Medical Department in Parnassus Avenue in San Francisco. The Medical Department has felt the need of such an addition to its plant for a long time, and especially since, under the new charter of San Francisco, the services in the City and County Hospital have been increased by the admission of the College of Physicians and Surgeons and the Homeopathic and Eclectic Colleges to share the clinical material. As a result of this the amount of clinical material for each institution is very small, and the university suffered especially, as it had thorough courses in ward work in operation and needed many patients to make them satisfactory.

Long before the earthquake and fire of April, 1906, plans had been made and were being worked out for the raising of a large sum of money to equip and endow a hospital, either in the medical buildings or in an entirey new building in a new site. The disaster of course upset all that had been accomplished. The faculty of the Medical Department, however, at once recommenced work, on lines necessarily modified, and has raised sufficient money to remodel a part of the medical building and to equip it as a hospital. The building, fortunately, was very easily changed over from laboratories to wards, and the many smaller rooms became naturally bath-rooms and nurse-rooms, and so on. The equipment is of the best, and while it is not all installed yet, what is there is perfectly satisfactory. At present there are accommodations for about thirty medical and surgical patients and twelve obstetric patients. This hospital and the Children's Hospital are the only hospitals of their type in San Francisco which have obstetric departments.

As this is to be a teaching hospital, it will be better to have it, as far as is practicable, a free hospital, and nowhere is such an institution needed more than it is in San Francisco, for here all the free beds in all the hospitals having free beds, have always been far below the average requirement in a large city, which is four free beds for every thousand of the population.

The total lack of endowment, however, forces the University to frankly open a hospital like the other hospitals in San Francisco, in which patients pay for their board, lodgings and nursing, and it is to that class of the people, which is very largely represented in San Francisco and in California, and which is only able to pay moderate hospital charges, that this hospital must at first look for its daily support.

The University will not be satisfied with this as a permanent arrangement, and every effort will be made to secure the necessary funds for the adequate endowment of the hospital, at the rate of $10,000.00 for a free bed, so that the ideal institution may finally be established for perpetuity.

While the present number of beds is limited, because of the lack of enough money to buy and furnish more, the building has room for the quadrupling of the number, and when that limit is reached there is another large building, originally planned for the Law Department of the University, but never occupied by it, and at present filled by the Hearst Anthropological collections. This building can as easily be remodeled into a hospital as was the medical building, and the joint capacity of the two buildings will be nearly two hundred and fifty patients. The department has still another building for the housing of the pupil nurses in the training school for nurses which will shortly be established.

The opening of this hospital, even in this small way, marks a time in the ideas and ideals of the teaching of medicine and the care of the sick on the Pacific Coast. It is the definite establishment of a hospital which is to be a primary teaching hospital, but in no hospital are the opportunities and rights of the sick and injured more jealously considered than in such an institution, so that the double object, healing the sick and teaching others how that is done, is the object and task set for itself by this department of the University.

The University confidently looks to the people of the whole Pacific Coast for support in this undertaking, not only to those who may come to the hospital for treatment, but even more to those who are able to give toward the endowment of the institution. Money given for that purpose will never be expended, but will become part of the foundation of the University, working for good as long as the present conditions in the world exist.

The hospital will be open for inspection on any day of the week.

NEW BOARD OF EXAMINERS ORGANIZED.

The Board of Medical Examiners met in San Francisco and organized as follows:

President—Dr. A. Lincoln Cothran of San Jose.

Vice-President—Dr. Park Dougall of Los Angeles.

Secretary—Dr. Chas. L. Tisdale of Alameda.

Associate Secretary—Dr. F. Dudley Tait of San Francisco.

Legal Advisor—William C. Tait of San Francisco.

Prosecuting Committee—Drs. Mattison, Dougall, Sisson, James, Pope and Barnard.

It was resolved that the Board co-operate with State Examining Boards and State Societies in giving publicity to revoked certificates and irregularities in colleges; and that a copy of this resolution be transmitted to each of the examining boards and California Colleges.

Prof. Harry Beal Torrey of Berkeley and Miss Gertrude Henderson of Los Angeles were reappointed as official examiners for matriculants to the medical schools of this State.

F. DUDLEY TAIT.

1906 EXAMINATION.

CALIFORNIA COLLEGES.

	No.	Passed.	Failed.	Failures.	
University of California....	19	18	1	5	Per Ct.
Cooper Medical College....	32	31	1	3	Per Ct.
Coll. of P. & S., S. F.....	17x	14	3	17x	Per Ct.
Coll. of P. & S., L. A.....	4o	4	0	0o	Per Ct.
Hahnemann Med. College..	5	5	0	0	Per Ct.
Univ. Southern California.	26	20	6	23 1-3	Per Ct.
California Eclectic	4	1	3	75	Per Ct.
Oakland Col. Med. & Surg.	4	4	0	0	Per Ct.
	111	97	14	15	Per Ct.

xSecond exam. for 4; 3rd exam. for 2.
oSecond exam. for 3.

OUTSIDE COLLEGES.

	No.	Passed.	Failed.	Failures.	
Regular	101	78	23	23	Per Ct.
Homeopaths	8	6	2	25	Per Ct.
Eclectic	6	4	2	33	Per Ct.
	115	88	27	23½	Per Ct.

FOREIGN.

No.	Passed.	Failed.	Failures.	
11	8	3	28	Per Ct.

REJECTED DIPLOMAS.

College of P. & S., S. F..... 2
(The college course covering only two years in 1 case.)
Hering Medical College 1
University of Baltimore 1
Memphis Hospital Medical College 1

School of Medicine.	Date of Graduation.	Anatomy.	Bacteriology.	Chemistry.	Mat. Med.	Obstetrics.	Pathology.	Physiology.	Practice.	Surgery.	Percentage.
PASSED.											
Cal. Scl. Med. Coll., S. F., Cal.	5, 16, 06	88	87	72	81	72	75	69	89	77	78 8-9
Coll. of P. & S., S. F., Cal.	5, 17, 06	90	86	77	86	83	76	91	79	84	83 5-9
Coll. of P. & S., S. F., Cal.	12, 4, 06	98	78	76	84	77	75	88	92	82	83 1-3
Coll. of P. & S., S. F., Cal.	5, 16, 06	91	73	82	89	75	72	75	79	75	79
Coll. of P. & S., S. F., Cal.	3, 14, 07	95	70	83	85	78	61	60	93	75	77 7-9
Coll. of P. & S., S. F., Cal.	5, 17, 06	95	79	80	78	75	60	61	79	75	75 7-9
Cooper Med. Coll., S. F., Cal.	5, 9, 06	93	79	78	83	88	84	92	75	95	85 2-9
Univ. of Cal., S. F., Cal.	1, 15, 07	90	81	77	80	81	98	75	77	95	83 7-9
Univ. of Cal., S. F., Cal.	5, 16, 06	96	70	69	77	83	82	90	93	90	83 1-3
Univ. of So. Cal., L. A., Cal.	6, 14, 06	93	87	72	77	75	70	84	83	78	79 8-9
1. Univ. of So. Cal., L. A., Cal.	6, 13, 05	79	68	71	79	84	76	66	73	79	75
Cleveland Coll. of P. & S., O.	5, 3, 05	93	75	78	75	74	77	81	86	78	79 2-3
Coll. of P. & S., Chicago, Ill.	5, 26, 03	82	72	77	82	75	63	85	90	88	79 1-3
Coll. of P. & S., Keokuk, Iowa.	2, 24, 85	94	84	72	83	82	68	75	76	70	78 2-9
2. Columbus Med. Coll., Ohio.	3, —, 86	85	84	81	96	86	60	89	81	80	82 4-9
Denver & Gross Coll. of Med., Colo.	4, 28, 03	98	77	80	87	77	76	87	90	80	83 5-9
Eclec. Med. Inst., Cincinnati, O.	5, 12, 96	88	88	60	84	67	61	78	86	68	75 5-9
Hahnemann Med. Coll., Philadelphia, Pa.	4, —, 93	78	69	72	91	71	68	63	89	74	75
Harvard Med. Coll., Mass.	6, —, 86	87	60	74	81	68	77	65	82	90	76
Harvard Med. Coll., Mass.	6, 29, 92	81	65	63	82	75	79	80	77	75	75 2-9
Long Island Hosp. Coll., N. Y.	5, 14, 01	85	60	84	80	98	60	71	77	70	76 1-9
St. Bartholomew Hosp., London, Eng.	4, —, 98	84	64	64	68	88	88	75	75	93	77 2-3
Univ. of Maryland.	3, 22, 87	95	90	73	88	90	64	85	96	80	83 5-9
Univ. of Pennsylvania.	—, —, 98	87	69	79	83	76	67	75	69	70	75
Wash. Univ. Med. Coll., Wash., D. C.	5, 24, 06	85	78	78	72	65	82	60	78	89	76 1-3
FAILED.											
Coll. of P. & S., S. F., Cal.	5, 17, 06	78	66	60	66	77	58	50	66	73	66
Coll. of P. & S., S. F., Cal.	5, 22, 05	82	44	53	59	25	45	46	65	50	52 1-9
Univ. of So. Cal., L. A., Cal.	9, 5, 04	76	57	60	80	84	66	70	75	75	71 4-9
Univ of So. Cal., L. A., Cal.	6, 14, 06	78	66	61	80	53	73	50	75	75	67 8-9
Amer. Med. Coll., St. Louis, Mo.	4, 22, 05	75	76	54	87	68	36	56	82	68	66 8-9
Baltimore Med. Coll., Md.	5, 22, 06	77	48	66	81	75	72	52	72	70	67 1-9
Bellevue Hosp. Med. Coll., N. Y.	3, 1, 80	58	24	66	75	77	61	20	34	70	53 8-9
Bennett Coll. of Ecl. M. & S., Ill.	5, 12, 02	79	80	63	86	81	42	55	80	60	69 5-9
Cleveland Homo. Med. Coll., O.	3, 22, 92	63	19	62	75	68	39	10	88	46	52 2-9
Hahnemann Med. Coll., Chicago, Ill.	-, -, 95	92	31	72	75	79	58	54	81	68	67 7-9
Howard Univ. Med. Coll., Wash., D. C.	3, 7, 87	83	57	74	79	70	75	65	61	70	70 4-9
Kansas City Med. Coll., Mo.	3, 26, 96	68	68	70	77	75	69	48	70	75	68 8-9
Med. Chirurgical Coll., Pa.	5, 28, 04	81	54	73	78	69	62	59	75	75	69 5-9
State Univ. of Iowa.	3, 12, 90	77	53	66	79	67	68	41	62	70	64 7-9
Univ. & Bellevue Hosp. Med. Coll., N. Y.	-, -, 04	81	41	69	67	76	70	60	76	75	67 2-9
Univ. of Athens, The, Greece.	10, 9, 06	15	31	40	55	43	37	33	55	50	39 8-9
Univ. of Missouri	4, 27, 97	70	52	69	90	62	75	54	70	76	68 2-3
Univ. of Pennsylvania	6, 13, 06	—	—	—	—	—	26	50	79	90	27 2-9
Univ. of Rome, Italy	-, -, 05	84	71	68	71	65	56	65	88	94	73 2-9

1. (Papers reviewed April 19, 1907.)
2. (Combined with Starling Med. Coll.)

NEW LICENTIATES.

Allen, Chas. L., Univ. of Md.
(1) Bartow, W. L., Long Island Hosp. Coll., N. Y.; Brown, J. Colville, Univ. So. Cal., L. A., Cal.
Card, Wm. S., Denver & Gross Coll. of Med., Colo.; Chambers, Wilford E., Coll. of P. & S., S. F., Cal.
Denman, Claire H., Hahnemann Med. Coll. of Phil., Pa.; Dunn, R. H., Coll. of P. & S., S. F., Cal.
Harrison, Wm. H., Jr., Coll. of P. & S., S. F., Cal.; Herrington, E. L., Coll. of P. & S., S. F., Cal.; Hodgkins, Albert E., St. Bartholomew Hosp., London, Eng.
Meharry, J. S., Univ. So. Cal., L. A., Cal.; Meracle, Geo. A., Cal. Ecl. Med. Coll., S. F., Cal.; Moore, Will H., Coll. of P. & S., Ill.
Nottage, Herbert P., Harvard Med. Coll., Mass.
Ochsner, Rich. L., Univ. of Cal., S. F., Cal.; Orbison, Thos. J., Univ. of Pa.
Parker, Harry Field, Wash. Univ. Med. Coll., Wash., D. C.
Range, F. W., Eclec. Med. Inst., Cin., O.; Richards, J. F., Coll. of P. & S., S. F., Cal.
Sobey, Gifford L., Univ. of Cal., S. F., Cal.; Spencer, Geo. A., Harvard Med. Coll., Mass.; Swearingen, A. Wm., Coll. of P. & S., Keokuk, Iowa.
Tuckerman, Wm. C., Cleveland Coll. of P. & S., O.
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(2) Wright, Thompson B., Columbus Med. Coll., Ohio.

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